

A. XXXVI.

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These lectures were given
at Edinburgh by John Gregory
Professor of Medicine there, in the
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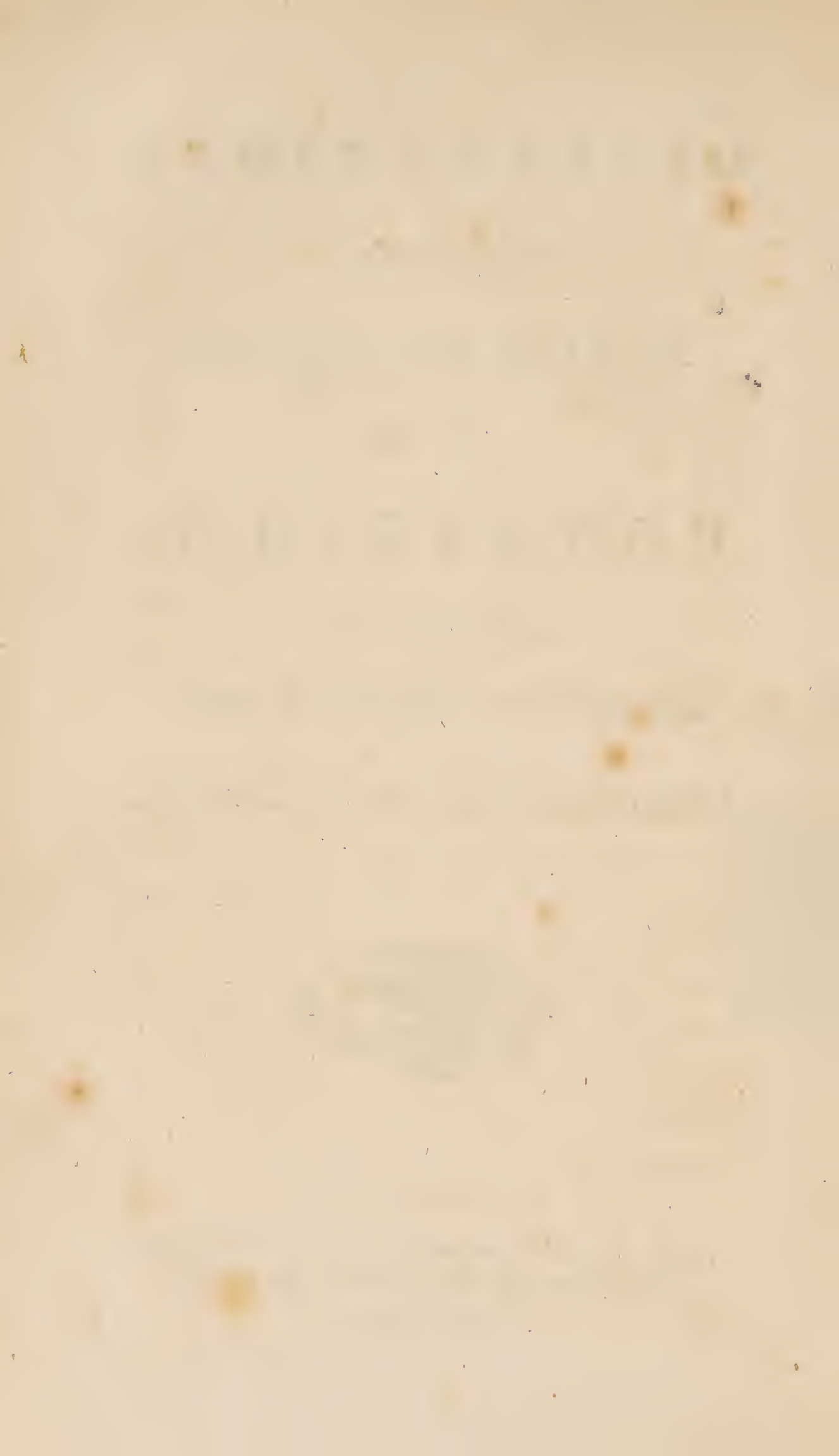
OBSERVATIONS
ON THE
DUTIES and OFFICES
OF A
PHYSICIAN;
AND ON THE
METHOD of PROSECUTING
ENQUIRIES in PHILOSOPHY.



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A D V E R T I S E M E N T.

THE following sheets contain two preliminary lectures, read not long ago, in one of the universities of a neighbouring kingdom, by a medical professor.

Many copies, from the general satisfaction they afforded his audience, were taken down in short-hand. Of these the reader is here presented with the most correct; and the editor flatters himself, that from the free and liberal spirit of enquiry which animates the whole of them, they will prove a most acceptable present to the public; and, of course, do no discredit to the ingenious author.

In the first lecture, the author has treated very fully on the duties and of-

fices of a physician: a path almost untrod till now. The noble and generous sentiments which are here displayed, will ever be a source of pleasure to minds unbiassed by prejudice, self-interest, or the unworthy arts of a Corporation. Whatever opposition this part of the work may meet with from those, who find their own foibles, or rather vices, censured with a just severity, the ingenuous part of mankind, however, will not fail in bestowing that degree of applause so justly due to its merit. At present there seems to be a general disposition in mankind to expose to their deserved contempt, those quackish, low, and illiberal artifices, which have too long disgraced the profession of medicine. It is therefore hoped, that the general spirit of this lecture will have a remarkable tendency to promote this laudable end; and that it will excite men of influence and of abilities to exert themselves in crushing that arrogance, which hath frequently served to cover the ignorance of many practitioners of medicine, and
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by means of which alone, they acquire such a share of practice as they are by no means entitled to. In consequence of this, real merit, which is very often accompanied with great modesty, will meet with its due reward.

“ Vir bonus & sapiens dignis ait esse
“ paratum :

“ Nec tamen ignorat quid distent æra
“ lupinis.” HORACE.

Those physicians, on the other hand, who are men of erudition and genius, who have the mens sibi conscia recti, and who are possessed of those amiable virtues, which are the ornaments of human nature, have nothing to fear from any thing advanced in the following pages: On the contrary, they will find, that every good quality they possess hath an obvious tendency, not only to advance the dignity of the science which they profess, but also to promote their own interest and reputation. Students of medicine will also reap much advantage from this part of the present publication;

lication; since they will see clearly, what course they ought to pursue, in order to attain the ultimate object of their desires, and, at the same time, will discover the rocks, upon which so many of the profession have been wrecked.

In the second lecture, the author has endeavoured to ascertain the true method by which enquiries into medicine are to be prosecuted; and has likewise pointed out, with much precision, the causes which have retarded the advancement of medicine, and the inconveniences which that science in particular at present labours under.

Lord Bacon justly observes, that medicine can never be improved till its imperfections are pointed out. Our author, therefore, hath attempted to explain the leading principles, according to which medical enquiries ought to be conducted. In order to this, he considers medicine as a branch of natural philosophy, to be prosecuted with the same general views, and upon the same plan.

plan. The observations have therefore a reference to this subject in general; and when necessary, a particular application is made to the practice of physic. Enlarged views of nature, of the connection of the sciences, the method of advancing them, and the causes which have hitherto retarded their advancement, render a person better qualified to study that particular department of science, to which he chuses to attach himself.

In the prosecution of this subject, the author has had occasion to adopt many sentiments of Lord Bacon, as delivered by that incomparable judge of philosophical writing, in his books *De Augmentis Scientiarum* & *Novum Organum*; which, however, are illustrated by examples more particularly taken from the history of physic. This part of the work, the editor apprehends, will be of remarkable utility to those who are entering upon the study of medicine, by directing them to the proper fountains from whence true medical knowledge can
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be drawn, and by teaching them to distinguish between what is true and what is false; wherein a well-founded theory consists; and how far it differs from that scholastic jargon of metaphysical chimeras, and new-coined unmeaning words, so frequently used by medical writers. This is a most important object to every person who studies medicine, either with a view to his own improvement, or to the farther advancement of the science.

Had the author himself published these lectures, they would doubtless have appeared to greater advantage. More accuracy, with regard to composition, would certainly have been displayed, and many judicious observations would probably have been added, tending to elucidate several particulars of the extensive subject of which he treats. But notwithstanding this, the editor hopes, that the language is sufficiently correct, and that the meaning of the author is every where delivered with precision and perspicuity.

LECTURE I.

THE design of the office which I have the honour to hold in this university, is to explain the practice of physick; by which I understand, the art of preserving health, of prolonging life, and of curing diseases. An art of great extent and importance; for which all your former medical studies were intended to qualify you: and indeed it is only so far as they tend to qualify you for this, that they are of consequence to you as physicians.

Before I proceed to the particular business of this course, I shall, agreeably to the usual custom, give some preliminary lectures. Such lectures are intended

to have a relation to the proper subject of the profession, but not to be essentially connected with it.—On this occasion I think it needless to dwell on the utility and dignity of the medical art. Its utility was never seriously called in question; every man who suffers pain or sickness will very gratefully acknowledge the usefulness of an art which gives him relief. People may dispute, whether physick, on the whole, does most good or mischief to mankind? just as they may dispute, whether the faculty of reason, considering how it is often perverted, really contributes to make human life more comfortable and happy? whether a vigorous constitution and an easy independent fortune are blessings or curses to those who possess them? whether the arts and sciences in general have proved beneficial or detrimental to mankind?—Such questions afford opportunities for the display of eloquence, and for saying plausible and ingenious things; but still nobody doubts of the real and substantial

advantages attending those acquisitions, if the natural and proper uses are made of them. Much wit has indeed, in all ages, been exerted upon our profession; but if we attend to it, this ridicule has rather been employed against physicians than physick. There are some reasons for this sufficiently obvious. Physicians, considered as a body of men, who live by medicine as a profession, have an interest separate and distinct from that of their art. In pursuit of this interest, some have acted with candour, with honour, with the ingenuous and liberal manners of gentlemen. Conscious of their own worth, they disdained all artificial colourings, and depended for success on their real merit. But such men are not the most numerous in any profession. Some impelled by necessity, some stimulated by vanity, and others anxious to conceal conscious ignorance, have had recourse to various mean and unworthy arts to raise their importance among the ignorant, who are always the most numerous part of mankind. Some of these

arts have been an affectation of mystery in all their writings and conversations relating to their profession; an affectation of profound knowledge, inscrutable to all, except the adepts in the science; an air of perfect confidence in their own skill and abilities; and a demeanor solemn, stately, and highly expressive of self-importance. These arts, however well they might succeed with the rest of mankind, could not escape the observation of the more judicious, nor elude the ridicule of men of wit and humour. Accordingly it has been pointed against them with so much keenness, that we never meet with a physician in a dramatick representation, but he is treated as a solemn coxcomb and a fool. But it is very evident, that all this satire is levelled against the particular manners of individuals, and not against the profession of medicine itself.

Of the dignity of the profession I need say very little. I suppose you are very well satisfied that you have chosen a creditable

ditable one. Whatever may have been the customs or caprices of a few particular countries, it has generally been looked upon, as one of the most liberal professions, and on the justest grounds. To excel in it requires a greater compass of knowledge than is necessary in any other art.—A knowledge of the mathematicks, at least of the elementary parts of them, of natural history, and natural philosophy, are essentially connected with it; as well as the sciences of anatomy, botany, and chemistry, which are deemed its immediate branches. There are likewise some pieces of knowledge, which, though not absolutely necessary to the successful practice of medicine, are yet such ornamental acquisitions, as no physician who has had a regular education is found without; such are, an acquaintance with the Latin, Greek, and French languages. If you add to this, that knowledge of the world, of men, and of manners, so useful to a physician, and which he naturally and insensibly imbibes from an

extensive intercourse with mankind, I think it will evidently appear, that no profession requires a greater variety of liberal accomplishments than that of physick; and this sufficiently establishes the dignity of the science.

We have particular reason to be pleased with the honourable point of view, in which our profession is regarded in every part of the British dominions. They who have seen the contemptible light in which some of its branches are considered in some other countries of Europe, will feel more sensibly the just regard paid to them in their own country. One happy consequence, among many others, which results from this, is, that gentlemen of the best families, distinguished for their spirit and genius, often apply to the study of medicine; and the liberal and ingenuous manners, naturally to be expected from men well born and genteelly educated, reflects an additional dignity on the profession.

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Besides the general consideration of the utility and dignity of the science of medicine, it may be considered in two different views.

1. In the first place, as presenting a very ample field for the exertion of genius.—The great extent of the subject, and a variety of causes, which I shall afterwards endeavour particularly to explain, have left it imperfect in many of its parts; and indeed there are some paths in it hitherto untrod.

2. In the second place, medicine presents an equally extensive field for the exercise of humanity. A physician has numberless opportunities of giving that relief to distress, which the wealth of India could not purchase. This, to a benevolent mind, must be one of the greatest pleasures it can ever hope to enjoy. But besides the good which a physician has often in his power to do in consequence of skill in his profession, there are many occasions that call for his assistance as a

man, as a man who feels for the misfortunes of his fellow creatures. In this respect he has many opportunities of displaying patience, good nature, generosity, compassion, and all the gentler virtues that do honour to human nature. I do not here speak of the obligations of principle. I speak only of what nature dictates to a heart possessed of any portion of goodness and sensibility. Our faculty have often been reproached with hardness of heart, occasioned, as is supposed, by their being so much conversant with human misery. I hope and believe the charge is unjust. Habit may beget a command of temper, and a seeming composure which is often mistaken for insensibility. When this insensibility is real, it is a great loss to a physician, as it deprives him of one of the most natural and powerful incitements to exert himself for the relief of his patient. On the other hand, a physician of too delicate sensibility is often rendered incapable of doing his duty by anxiety and excess of sympathy, which

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cloud his understanding, depress his spirit, and prevent him from acting with that steadiness and vigour, upon which perhaps the life of his patient in a great measure depends.

This naturally leads me to make some observations on the duties and office of a physician; a subject of great importance, but perhaps of too delicate a nature for a physician to treat of with openness and freedom. On this, however, I should be altogether silent, if I did not feel myself at full liberty to discuss it without any reserve. The difficulty of treating this subject in such a manner as to give no offence arises from hence, that medicine may be considered either as an art the most beneficial and important to mankind, or as a trade by which a considerable body of men gain their subsistence. These two views, though distinct, are far from being incompatible, though in fact they are too often made so. I shall endeavour, however, to set this matter in such a light as may shew that the system
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of conduct in a physician, which tends most to the advancement of his art, is such as will most effectually maintain the true dignity and honour of the profession, and even promote the private interest of such of its members as are men of real capacity and merit. I am under less apprehension of discussing this subject before gentlemen at your period of life, than if you were further advanced in years. Youth indeed is the season when every sentiment of liberty, of generosity, and of candour, most easily find their way to the heart. If they do not reach it then, they never will afterwards. Age may improve the understanding by accessions of knowledge and experience; whilst at the same time that warmth of temper and imagination, which so often mislead the judgment, gradually subside. But it unfortunately happens, that this very circumstance, which in some respects improves the understanding, in others throws a damp upon genius, checks the ardent pursuit of science and truth, and
 shuts

shuts the heart against every manly, enlarged, and generous sentiment.

In the prosecution of this subject, I shall, in the first place, consider, what kind of genius, understanding and temper naturally fit a man for being a physician.—In the second place, what are the moral qualities to be expected from him in the exercise of his profession, viz. the obligations of humanity, patience, attention, discretion, secrecy, and honour, which he lies under to his patients.—In the third place, I shall take notice of the decorums and attentions peculiarly incumbent on him as a physician, and which tend most effectually to support the dignity of the profession; as likewise the general propriety of his manners, his behaviour to his patients, to his brethren, to surgeons and apothecaries. In the fourth place, I shall particularly describe that course of education which is necessary for qualifying a physician to practise with success and reputation; and shall, at
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the same time, mention those ornamental qualifications expected from the physician, as a gentleman of a liberal education, and without which it is difficult to support the honour and rank of the profession.—

I. I begin with an enquiry into the genius, understanding, and temper, which naturally fit a man for being a physician.

Perhaps no profession requires so comprehensive a mind as medicine. In the other learned professions, considered as sciences, there is a certain established standard, certain fixed laws and statutes, to which every question must constantly refer, and by which it must be determined. A knowledge of this established authority may be attained by assiduous application and a good memory. There is little room left for the display of genius, where invention cannot add, nor judgment improve; because the established laws, whether right or wrong, must be submitted

submitted to. The only exercise for ingenuity, is in cases where it does not clearly appear what the laws are. But even then, as disputable points must be referred to the determination of judges, whose opinions, being formed from various circumstantial combinations, frequently differ, there is no criterion by which the ingenious reasoner can be judged; and his conclusions, whether well or ill drawn, must still remain undecided. The case is very different in medicine. There we have no established authority to which we can refer in doubtful cases. Every man must rest on his own judgment, which appeals for its rectitude to nature and experience alone. Among the infinite variety of facts and theories with which his memory has been loaded in the course of a liberal education, it is his business to make a judicious separation between those founded in nature and experience, and those which owe their birth to ignorance, fraud, or the capricious systems of a heated and deluded

deluded imagination. He will likewise find it necessary to distinguish between important facts, and such as, though they may be founded in truth, are notwithstanding utterly useless to the main ends of his profession. Supposing all these difficulties got over, he will find it no easy matter to apply his knowledge to practice. In teaching a system of the practice of physick, every disease must be considered separately, and as existing by itself; but in fact diseases are found complicated in endless varieties, which no system, however perfect, could possibly admit. This occasions an embarrassment to a young practitioner, which nothing can remove but a habit of nice discrimination, a quickness of apprehension which enables him to perceive real analogies, and, what is rarely united with this, a solidity of judgment, which secures him from being deceived by imaginary ones. A student of much fancy and some learning has no idea of this embarrassment. In the pride of his heart he fancies every

every disease must yield before him ; he thinks he not only knows the proximate causes and indications of cure in every disease, but a variety of remedies that will exactly fulfil these indications. It will be unfortunate however for his patients, if a little experience does not humble this pride, and satisfy him that in many cases he neither knows the proximate causes nor the indications of cure, nor how to fulfil these indications when he does know them ; or shew him, what is equally perplexing, that the indications are different and contradictory. In this situation his boasted science must stoop, perhaps, for some time, to be an idle spectator, or to palliate the violence of particular symptoms, or to proceed with the utmost caution and diffidence, on some very loose and precarious inductions from analogy. Such are the difficulties which a physician has to encounter in his early practice ; to conquer which is required, independent of all the assistances of a proper education, the concurrence

currence of an acute, penetrating genius ; of a clear, solid judgment ; and, in many cases, of a quickness of apprehension, which instantaneously perceives where the greatest probability of success lies, and seizes the happy moment of action.

But although a physician should possess that enlarged medical genius, which I have just now described, a capacity of another kind is also required. A physician has not only his own prejudices to conquer, but he must study the temper, and struggle with the prejudices of his patient, of the relations, of his own brethren, of the world in general ; he must guard himself against the ill offices of those, whose interests interfere with his ; and it unfortunately happens, that the only judges of his medical merit, are those who have an interest in concealing or depreciating it. Hence appears the necessity of a physician's having a large share of common sagacity, and knowledge of the world, as well as of medical genius and erudition.

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Such is the genius and capacity required in a physician; but a certain state of the temper and passions, either natural or acquired, is requisite, in order to give them their full advantages. Sudden emergencies often occur in practice, and diseases often take unexpected turns, which are very apt to flutter the spirits of a man of lively parts and a warm temper. This may embarrass his judgment in such a manner as to disable him from discerning what is proper to be done, or if he does discern it, it may render him irresolute in his conduct. Yet such occasions call for the quickest discernment, and the steadiest and most resolute conduct. The follies and bad behaviour of patients, and a number of little difficulties and contradictions which every physician must encounter in his practice, are likewise apt to ruffle his temper, and consequently to impair his judgment, and make him forget the propriety and decency of his behaviour. Hence appears the necessity of a physi-

cian's possessing great presence of mind, composure, steadiness and resolution in acting, even in cases where, in his private judgment, he is extremely diffident. It is also necessary to acquire such a command of temper, as may enable him to conceal his diffidence or embarrassment, both for the patient's sake and his own.

II. I come now to mention those moral qualities peculiarly required in the character of a physician. The most obvious of these is humanity; that sensibility of heart which makes us feel for the distresses of our fellow creatures, and which of consequence incites us in the most powerful manner to relieve them. Sympathy produces an anxious attention to a thousand little circumstances that may tend to relieve the patient; an attention which money can never purchase: hence the unspeakable advantages of having a friend for a physician. Sympathy naturally engages the affection and confidence of a patient, which in many cases is of the

the utmost consequence to his recovery. If a physician possesses softness and gentleness of manners, a compassionate heart, and what Shakespeare so emphatically calls “the milk of human kindness,” a patient feels his approach like that of a guardian angel ministering to his relief; while every visit of a physician who is unfeeling, harsh or brutal in his manners, makes his heart sink within him, as at the presence of one, who is come to pronounce his sentence of death. Men of the most compassionate tempers, by being daily conversant with scenes of distress, acquire in process of time that composure and firmness of mind so necessary in the practice of physick. They can feel whatever is amiable in pity, without suffering it to enervate or unman them. Such physicians as are callous to every sentiment of humanity, affect to treat this sympathy with great ridicule, and represent it either as hypocrisy, or the indication of a feeble mind. That it is often affected is beyond

question ; but this affectation is easily seen through. Real sympathy is never ostentatious ; on the contrary, it always strives to conceal itself. But what most effectually detects this hypocrisy, is a physician's different manner of behaving to people in high and people in low life ; to those who see him genteely, and those who cannot see him at all. A generous and elevated mind is even more shy in expressing sympathy with those of better rank, than with those in humbler life ; being jealous of the unworthy construction so usually annexed to it.—The insinuation that a compassionate and feeling heart is the effect of a feeble mind, is equally replete with malignity and falsehood. Universal experience demonstrates, that a gentle and humane temper, so far from being inconsistent with vigour of mind, is its usual attendant ; and that rough, blustering manners very generally accompany a weak understanding and a dastardly soul, and are indeed frequently affected by men void of magnanimity

nanimity and personal courage, to conceal their natural infirmities.

There is a species of good nature different from the sympathy I have been speaking of, which is very amiable in a physician. It consists in a certain gentleness and flexibility, which makes him suffer with patience, and even apparent cheerfulness, the many contradictions and disappointments he is subjected to in his practice. If he is extremely rigid and particular in his directions about regimen, he may be assured they will not be strictly followed; and if he is severe in his manners, the deviations from his rules will as certainly be concealed from him. The consequence is, that he is kept in ignorance of the true state of his patient; he ascribes to the consequences of the disease, what is merely owing to irregularities in diet, and attributes effects to medicines which were every day thrown out of the window. The dangerous errors which in this way he may

be led into, are sufficiently obvious, and might easily be prevented by a prudent relaxation of rules which will never be obeyed. The government of a physician over his patient should undoubtedly be absolute, but this absolute government very few patients will submit to. A prudent physician should therefore prescribe such laws, as, though not the best, are yet the best that will be obeyed; of different evils he should choose the least, and, at any rate, never lose the confidence of his patient, and thus be deceived as to his true situation. This indulgence, however, which I am pleading for, must be managed with great judgment and discretion; as it is very necessary that a physician should support a proper dignity and authority with his patients, for their sakes as well as his own. There is a numerous class of patients who put a physician's good nature and patience to a very severe trial; these I mean who suffer under nervous complaints. Although the fears of these patients are generally

generally groundless, yet their sufferings are real; and the disease is as much seated in the constitution as a rheumatism or a dropfy. To treat it with ridicule or neglect, from supposing it the effect of a crazy imagination, is equally cruel and absurd. It is generally produced or attended with bodily disorders, obvious enough; but supposing them not obvious, still it is the physician's duty to do every thing in his power for the patient's relief. Disorders in the imagination may be as properly the object of a physician's attention as a disorder of the body; and surely they are, frequently, of all distresses the most dreadful, and demand the most tender sympathy: but it requires great address and good sense in a physician to manage them properly. If he seems to treat them slightly, or with unseasonable ridicule, the patient is shocked beyond measure; if he is too anxiously attentive to every little circumstance, he feeds and rivets the disease. For the patient's sake therefore, as well as hi

own, he must endeavour to strike the due medium between negligence and sarcastic ridicule on the one hand, and an anxious solicitude about every trifling symptom on the other. He may sometimes divert the mind, without seeming to intend it, from its present sufferings, and from its melancholy prospects of the future, by insensibly introducing subjects that are amusing or interesting; and sometimes he may successfully employ a very delicate and good-natured ridicule. —It is not unusual to find physicians treating these complaints with the most barbarous neglect, or mortifying ridicule, when the patients can ill afford to see them; while at the same time, among patients of higher rank, they foster them with the utmost care and apparent sympathy: there being no diseases, in the stile of the trade, so lucrative as those of the nervous kind.

We sometimes see a very remarkable difference between the behaviour of a
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physician at his first setting out in life, and afterwards when he is fully established in reputation and practice. When beginning the world he is affable, polite, humane, and assiduously attentive to his patients ; but when in process of time he has reaped the fruits of such a behaviour, and finds himself above the world, and independent, he assumes a very different tone ; he becomes haughty, rapacious, careless, and sometimes perfectly brutal in his manners. Conscious of the ascendancy he has acquired, he acts the part of a despotic tyrant, and insolently boasts, that no man, in the place where he resides, dare die without his leave. He not only takes a most ungenerous advantage of the confidence which people have in his abilities, but lives upon the effects of his former reputation, when all confidence in his abilities has ceased : because a physician who has once arrived at a very extensive practice, continues to be employed by many people for their friends, who think of him themselves with

with contempt; they employ him because it is fashionable to do so, and because they are afraid, if they neglected it, their own characters might suffer in the world.

A physician, by the nature of his profession, has many opportunities of knowing the private characters and the private transactions in families. Besides what he learns from his own observation, he is often admitted to the intimate confidence of those, who perhaps think they owe their life to his care. He sees people in the most disadvantageous circumstances, very different from those in which the world views them;—oppressed with pain, sickness, and low spirits. In these humbling situations, instead of usual cheerfulness, evenness of temper, and vigour of mind, he meets with peevishness, impatience, and a spirit perfectly broken and enervated. Hence it appears how much the characters of individuals, and the peace and happiness of families,

families, may sometimes depend on the discretion, secrecy, and honour of a physician; who, without deviating from truth, may render characters that are truly respectable, ridiculous and contemptible. The most profound secrecy is particularly requisite where women are concerned. Independent of the peculiar tenderness with which a woman's character should be treated, there are certain circumstances of health, which, tho' in no respect connected with her reputation, every woman, from the natural delicacy of her sex, is extremely anxious to conceal; and, in some cases, the concealment of these circumstances may be of the greatest consequence to her health, her interest, and her happiness.—A physician, who is a man of gallantry, has many advantages in his endeavours to seduce his female patients; advantages but too obvious, but which it would be improper to recite. A physician who avails himself of these, is a mean and unworthy betrayer of his charge, or of
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that weakness which it was his duty, as a man of honour, to conceal and protect.

Temperance and sobriety are virtues very peculiarly required in a physician. In the course of an extensive practice difficult cases frequently occur, which require the most vigorous exertion of memory and judgment, otherwise very important lives may often be lost. I have heard it said of some eminent physicians, that they prescribed as well when drunk as when sober. If there was any truth in this assertion, it contained the most severe reflection that could be thrown out against their attention, and capacity in their profession. It shewed evidently they practised by rote, or prescribed for some of the more obvious symptoms, without attending to those nice discriminating circumstances, a knowledge of which makes the great difference between a physician who has genius, and one who has none. Intoxication implies a defect in the memory and judgment; it implies confusion of ideas, perplexity

perplexity and unsteadiness; and must therefore unfit a man for every business that requires the lively and vigorous use of his understanding. This state, however, is very different from that produced in some people by a chearful glass, which, when taken moderately, often enlivens and invigorates every active faculty of the mind.

I may mention among the moral duties incumbent on a physician, that candor, which makes him open to conviction, and ready to acknowledge and rectify his mistakes. His obstinate adherence to an unsuccessful method of treating a disease may sometimes be owing to a high degree of self-conceit, and an absolute belief of the infallibility of his system. The error here is without remedy, because it flows from a weak and ignorant head. Profound knowledge and clear discernment may lead one into the extreme of diffidence and humility, but are absolutely inconsistent with self-conceit.

ceit. But it too often happens, that this obstinacy proceeds from a defect in the heart. A physician sometimes sees he is wrong, but is too proud, or rather too vain, to acknowledge his error, especially if the error is pointed out to him by another. To this species of pride, a pride incompatible with true dignity and elevation of mind, have the lives of thousands been sacrificed. A prudential regard indeed for the patient's safety may often make it necessary for a physician to conceal any embarrassment or mistakes from him, lest it alarm him and lose his confidence ; but no man will persist in an error he is conscious of, who has the least regard to honour or principle.

III. I proceed now to make some observations on the peculiar decorums and attentions suitable to a physician, and such as tend most effectually to support the dignity of the profession.

Decorum, decency, and propriety are words very indeterminate in their application;

cation; for this reason, that the ideas annexed to them are partly founded in nature and common sense, partly in caprice, fashion, and the customs of particular nations. In the first case the obligation to them is immutable, the same in all ages and nations; in the latter it is fluctuating and less binding. When it is necessary I shall endeavour to mark this distinction.

I have already taken notice of the principal duties a physician owes to his patients, of the propriety of his attending to their particular tempers and constitutions, and allowing them every indulgence consistent with their safety. Sometimes a patient himself, sometimes one of his friends, will propose to the physician a remedy, which, for some reason or other, they expect may do him service. Their proposal may be a good one; it may suggest to the ablest physician, what, perhaps, till then, might not have occurred to him. It is undoubtedly,

doubtedly, therefore, his duty to adopt it. Yet there are some of our faculty who, from a pretended regard to the dignity of the profession, but in reality from the meanest and most selfish views, refuse to apply any remedy proposed in this manner, without regard to its propriety. But this is an insolent piece of tyranny. Every man has a title to speak where his life or his health is concerned, and every man is entitled to suggest what he thinks may save the life of his friend. It becomes them to make their proposals with politeness, and a suitable deference to the superior judgment of the physician; it becomes him to hear what they have to say with attention, and examine it with candour. If he really approves it, he should frankly say so, and act accordingly; if he disapproves it, he should declare his disapprobation in such a manner, as shews it proceeds from conviction, and not from pique or obstinacy. If a patient is determined to try an improper or dangerous
remedy

remedy, a physician should refuse his function; but he has no title to complain of his advice not being followed, as he has no right to hinder any man from going out of the world in his own way.

A physician is often at a loss in speaking to his patients of their real situation in respect to hazard of their lives. A deviation from truth is sometimes in this case both justifiable and necessary. It often happens that a sick person is dangerously ill, who, if he was to be told of his danger, would be hurried to certain death. It sometimes again happens, that a man is seized with a dangerous illness, who has made no previous settlement of his affairs, and yet perhaps the future subsistence or happiness of his family may depend on his making such a settlement. In this and other similar cases it may be proper for a physician, in the most prudent and gentle manner, to warn his patient of his real danger,

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and even solicit him to execute the necessary settlements. But, in all cases whatever, it is a physician's duty never to conceal his real situation from the relations. Justice obliges him to this, because it gives them an opportunity of calling for further assistance, if they should think it either necessary or decent. To a man of a compassionate and feeling heart, this is one of the most disagreeable duties of his profession: but it is indispensable. The manner of doing it requires often prudence and humanity. What should reconcile him most easily to this painful office, is the reflection that if the patient should recover, it will prove a most joyful disappointment to his friends; and if he dies, it makes the shock fall more gently. Let me here exhort you against a barbarous custom of some physicians, the leaving your patients when their life is absolutely despaired of, and when it is no longer decent to take fees. It is as much the business of a physician to alleviate pain,

pain, and to smoothe the avenues of death, as to cure diseases. Even in cases where his skill as a physician can be of no further avail, his presence and assistance as a man and as a friend may be highly grateful and useful, both to the patient and his nearest relations. Neither is there any propriety in his going out at one door when the clergyman enters at the other; a quaint conceit of some of our faculty, more expressive of impiety than humour. On the contrary, it is decent and proper that they should mutually understand and assist one another. The conversation of a clergyman of chearful piety and good sense, in whom a sick man confides, may sometimes be of more consequence in composing the anguish of his mind, and the flutter of his spirits, than all the drugs in the dispensatory; while a gloomy and wrong-headed enthusiast may terrify him to distraction, and cut short a life, which, by proper attention, there was the greatest probability of saving.

Every thing relative to the fees of physicians must be regulated by the customs of particular countries. That there should be a distinction, however, between the fees to be taken from a man of fortune, and from one whose circumstances are more narrow, is a very plain rule, founded in humanity and common-sense : yet there is often great difficulty in its application. A depressed situation in life does not imply a mean nor a sordid spirit ; neither does an opulent and elevated station confer a generous one. A noble mind with a small fortune, has generally too large a share of pride and sensibility, which are easily wounded by obligations not conferred in a very delicate manner. A physician who does not take fees, should be particularly careful not to fail in point of attention to his patient ; otherwise, instead of a favour, he does him an essential injury ; an injury the more cruel, because the patient does not feel himself at liberty to complain of the neglect, or to call in another physician.

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There are often unhappy jealousies and animosities among physicians, from which their patients suffer very severely. A physician, however, who has any sense of justice or humanity, will never involve his patient in the consequences of private quarrels, with which he has nothing to do. Physicians in consultation, whatever may be their private resentments or opinions of one another, should divest themselves of all partialities, and think of nothing but what will most effectually contribute to the relief of those under their care. If a physician cannot lay his hand to his heart, and say that his mind is perfectly open to conviction, from whatever quarter it shall come, in common honesty he should decline the consultation. Many advantages arise from physicians consulting together, who are men of candour, and mutually confident of each others honour. A remedy may occur to one which did not to another; and a physician may want resolution, or sufficient confidence in his own opinion,

to prescribe a powerful but dangerous remedy, on which, however, the life of his patient may depend; in this case the concurrent opinion of his brethren may determine his conduct. But if there is no mutual confidence; if opinions are regarded, not according to their intrinsic merit, but according to the person from whom they proceed; or if there is reason to believe, that proposals delivered with openness are to be whispered abroad, and misrepresented to the publick, without regard to the obligations of honour and secrecy; and if, in consequence of this, a physician is singly to be made responsible for the effects of his advice; in such cases, consultations of physicians tend rather to the detriment than advantage of the sick, and end commonly in some very trifling and insignificant prescriptions.—The quarrels of physicians, when they end in appeals to the public, generally hurt all the contending parties; but what is of much more consequence, they discredit the profession, and expose the

the whole faculty to ridicule and contempt.—Nothing, in my opinion, but the cause I hinted above can justify any physician from refusing to consult with another, when he is required to do so. If he is conscious he cannot behave with temper, and that his passions are so rankled as to impair his judgment, he may and ought to refuse it. But such circumstances, as the place where the person he is to consult with had his degree, or, indeed, whether he had a degree from any place or not, cannot justify his refusal. It is a physician's duty to do every thing in his power, that is not morally criminal, to save the life of his patient, and to search for remedies from every source, and from every hand, however mean, and in many respects contemptible. This, it may be said, is sacrificing the dignity and interests of the faculty. But I am not here speaking of the private police of a corporation, or the little arts of a craft. I am speaking of the duties of a liberal profession, whose ob-

ject is the life and health of the human species, to be exercised by gentlemen of honour and ingenuous manners. The dignity of such a profession can never be supported by means that are inconsistent with its ultimate object, and that can only tend to swell the pride and fill the pockets of a few individuals.

There have arisen from time to time, and particularly in France about twenty years ago, great disputes about the separate boundary of physic and surgery, and the proper subordination of surgery to physic. A dispute most pernicious to the interests of mankind, and very unworthy of scholars and gentlemen. I shall take this opportunity of giving my sentiments concerning it.

There was anciently, as Celsus informs us, a division of medicine into three parts; the first regarded the regulation of diet; the second, the prescription of remedies; the third, manual operations.

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The two first, though distinguished in theory, were always united in practice; the last has often been practised separately. Sometimes the ancient physicians performed the manual part themselves, at other times it was done by slaves kept in the house for that purpose. Among the moderns the arts of physic and surgery have often been promiscuously practised by the same men; for example, Hildanus, Severinus, Bartholine, and many others of distinguished genius and literature. But in many parts of Europe, both formerly and at this day, surgery has not been reckoned among the liberal professions, but surgeons have ignominiously been classed with the corporation of barbers. The separation of physic from surgery in modern times, has been productive of the worst consequences. The physicians and surgeons, formed into separate societies, had separate interests to support, which, in many cases, clashed with each other. The surgeons claimed to themselves, not only the exclusive privilege

vilege of performing all operations, but likewise the management of most external diseases, and some internal ones, where operations were supposed to be often necessary: by which means the method of cure in many diseases was directed by ignorant and illiterate people. But it must be apparent to every sensible and ingenuous observer, that the diseases of the human body are so intimately combined, that it is impossible to understand some of them perfectly and be entirely ignorant of all the rest; and equally impossible to understand any of them, without a proper knowledge of Anatomy and the Animal oeconomy, both in its sound and morbid state. It must at the same time be owned, that an able practitioner, well grounded in such general knowledge, may have considerable advantages, and more readily make improvements, by attaching himself to the study of one or two particular diseases.— Every disease, external as well as internal, falls under the cognizance of the physician,

physician, and it is a reflection on him to be ignorant of them; neither is it possible to fix any such precise boundaries between external and internal diseases, as to render the distinction in any degree useful, or applicable in practice. Suppose a person to break his leg, and a fever and gangrene to ensue; the question occurs, whether the limb should be immediately amputated, or if the effects of certain medicines, given with a view to stop the progress of the gangrene, should be waited for till another day. It is evidently the business of a physician, in this case, to judge from the symptoms, from the habit of body of the patient, and from other circumstances of moment, whether the delay is prudent or not.—As to the performance of the operation itself, that is a very different question. The genius, the discernment and education requisite to make a good physician, are not necessary to make a good operator.—What is most peculiarly necessary to make a good operator, is a resolute, collected mind, a good eye, and a steady hand.

hand. These talents may be united with those required to make an able physician; but they may also be separated.—If surgery was confined to a set of men who were to be merely operators, it might justly be expected, that the art of operating would be more quickly brought to perfection by such men, than by those who follow a more complicated business, and practise promiscuously all the branches of medicine. The same advantage would accrue to pharmacy, if apothecaries were to be confined to the mere business of compounding medicines. But, in fact, this is not the case. In some parts of Europe surgeons act as physicians in ordinary; in others the apothecaries do this duty. The consequence is, that in many places physic is practised by low, illiterate men, who are a scandal to the profession. On the other hand, whilst all the branches of medicine are indifferently practised by men formed into separate societies, differently educated, and having different interests, it is plain, that
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none of the branches can be cultivated to the greatest advantage, and that the interest of mankind must often suffer from the jealousies and jarrings of professions, whose boundaries are not fixed, though they will much oftener suffer by the vilest collusion between these several professions. It is a known fact, that in many parts of Europe, physicians who have the best parts, and best education, must yet depend for their success in life upon apothecaries, who have no pretensions either to the one or the other; and that this obligation is too often repaid by what every one who is concerned for the honour of medicine must reflect on with pain and indignation.

From what I have said, I think it will appear, that I have no intention to throw reflections upon any particular profession. The profession of every branch of medicine is respectable, when it is exercised with capacity and honour. I only contend for a very evident truth, either that
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the different branches should be separately professed, or if one person will profess them all, he should be regularly educated to, and thoroughly master of them all. I am not here settling points of precedence or heraldry, or insinuating the deference due to degrees in medicine. As a doctor's degree can never confer sense, that title alone can never command regard; neither should the want of it deprive any man of the esteem and deference due to real merit. If a surgeon or apothecary has got the education and knowledge required in a physician, he is a physician to all intents and purposes, whether he is a doctor or not, and ought to be respected and treated accordingly. In Great Britain surgery is a genteel and honourable profession. In most parts of it surgeons are the physicians in ordinary to most families, which their education and knowledge often gives them an undoubted title to be; and a physician is only called where a case is difficult, or attended with danger. There are certain

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limits, however, between the two professions, certain forms and pieces of good breeding to be observed, which the gentlemen on both sides must attend to ; as they are established by the customs of the country, and by the laws of their particular societies. But, I imagine, a physician of a candid and liberal spirit, will never take advantage of what a nominal distinction, and certain, real, or supposed privileges, give him over gentlemen, who, in point of real merit, are his equals ; and that he will feel no superiority, but what arises from superior learning, superior abilities, and more liberal manners. He will despise those distinctions founded in vanity, self-interest, or the caprice of the world ; and will take care, that the interests of science and mankind shall never be hurt by a punctilious adherence to such formalities.

Among the peculiar decorums of a physician's character, much regard has been had to a certain formality in dress,
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and a particular gravity and stateliness in the general course of his behaviour. I formerly observed, that decorum and propriety have their foundation sometimes in nature and common sense, sometimes only in caprice and fashion. This observation may be exemplified by the present subject. In many cases a particular formality and pomp of dress is proper and decent, independent of any fashion whatever; for example, in judges and magistrates. Whatever circumstances in their mode of dress, or external appearance, make them the objects of love and reverence, these undoubtedly are highly proper; because, by a very natural association, they impress the minds of the people with a due veneration and fear of the laws. Neither is there any hazard of abuse from this reverence procured to the office of a magistrate. The case is very different in the profession of medicine. There is no natural propriety in a physician's wearing one dress in preference to another; it not being necessary

cessary that any particular respect or authority should be annexed to his office, independent of what his personal merit commands. Experience, indeed, has clearly shewn, that all our external formalities have been often used as snares to impose on the weakness and credulity of mankind; that they in general have been most scrupulously adhered to by the most ignorant and impudent of the profession; that they frequently supplant real worth and genius; and that, so far from supporting the dignity of the profession, they often expose it to ridicule and contempt. If then there is no natural and real propriety in a physician's wearing a distinguishing dress, he can be under no obligation to use it, but what arises from the particular fashion of the country where he resides. This is an obligation, however, which common sense and prudence make it necessary he should regard. If the customs or prejudices of any country affix the idea of sense, knowledge, or dignity to a load of artificial

hair worn on the head, to a gold-headed cane dangling at the wrist, to a full-trimmed coat, and a sword, it is unquestionably a physician's business, from the common principles of self-preservation, to equip himself accordingly. But in a country where a physician's capacity is not measured by such standards, and where he may dress like other people, without sinking in their estimation, I think he is at full liberty to avail himself of this indulgence, if he so chuses, without being considered as deviating from the propriety and decency of his profession.

As to the general character of a physician's manners, I see no reason why they should be different from those of a gentleman. If the fashion of a country absolutely requires that he should always look exceeding wise and solemn, he must submit; but if he voluntarily lays himself under these or any other restraints, except those of honour and conscience, and assumes a character which is not his

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own, there is reason to suspect, that he is either a knave or a fool.

There is great impropriety in a physician's indulging himself in a certain nicety and refined delicacy, which makes him easily disgusted with many disagreeable circumstances he must meet with in his practice. Genuine delicacy is a virtue of the mind, and though it shews itself by an attachment to cleanliness, neatness, and even elegance, where it can be afforded, yet it always gives place and forgets itself, where duty or the interests of humanity require it. It is ridiculous in a physician to think any attentions, or any duties, below his dignity, which can contribute to the relief of his patient. When necessity requires it, he acts unworthily, if he does not become, to the best of his abilities, both surgeon, apothecary, and even nurse. If, however, without such necessity, he encroaches on another's province, then, indeed, he degrades himself; not because

he acts below the dignity of a physician, but because he behaves in a manner unbecoming the character of a gentleman.

Having very freely expressed my sentiments, concerning what I think a false dignity assumed by some of our faculty, I shall now, with the same freedom, animadvert on a circumstance not unfrequent in the behaviour of learned men, physicians as well as others, which seems to me very essentially injurious to the true dignity of our profession; I mean that fervility of manners, and that abject flattery of people of rank and fortune, which, in modern times, so often disgraces men, in other respects eminent for learning and ingenuity. This is one of the most humbling circumstances in the general character of men of genius and science.—The external magnificence and splendor which surround high rank, seems to dazzle the understandings of those who live at a distance from it, and who are ignorant what a contemptible

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inside it often covers. It makes them crouch to those outward distinctions of title and fortune, which their philosophy, if it was any thing but a name, would make them despise, at the same time that they paid them that external respect, which the order of society, and the established forms of good breeding required. We should at first view expect to find men of high intellectual abilities, possessed of a very independent spirit, and great elevation of mind. Superior parts and knowledge would even seem to lay a natural foundation for pride, or a generous elation of heart, accompanied perhaps with too high a degree of self-esteem, upon a comparison with those who assume a tone of superiority upon the score of rank and fortune alone. If such a pride, however, is not attended with insolence, but is properly corrected by good nature or good manners, it is a very pardonable weakness, as it arises from qualities that ought to confer real rank and importance upon those who possess them.

But there is a pride of science, unaccompanied with true dignity, assuming and overbearing to inferiors, but meanly fawning and submissive to those of superior rank and fortune.—I will readily acknowledge, that there is a certain awkwardness unavoidably attendant on men of retirement and study ; and that there is an ease, a gracefulness, and elegance of manners, which can only be acquired by a daily intercourse with the polite world. But the liberal manners, and liberal spirit, which still more peculiarly distinguish the gentleman, are confined to no rank or situation, as they have no dependence on external forms of good breeding ; and should particularly be expected to prevail among those whose minds have been opened and enlarged in the pursuits of science.

Great disputes have arisen in our profession, about the propriety of a physician's keeping secrets or nostrums. It has been said, with great plausibility, in
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vindication of this practice, that the bulk of mankind never attend, nor pay any regard, to what is made level to their own capacities; and that they put no value upon what costs them nothing. Experience certainly shews, that mankind are wonderfully attached to whatever has an air of mystery and concealment. A vender of a quack medicine does not tell more lies about its extraordinary virtues, than numbers of people do who have no interest in the matter; even men of undoubted sense and probity. A passion for what is new and marvellous, operates more or less on every human imagination; and, in proportion as that is heated, the understanding is duped and confounded. When a nostrum is once divulged and sold for a trifle, all its wonderful qualities immediately vanish, and in a few months it is utterly forgot. If it is really a valuable medicine, the regular faculty may adopt it, but it never recovers its high reputation in the world.—It is likewise said, that this

is the only way in which any valuable medicine can be effectually introduced into practice ; because it is the only way by which it can procure the attention of the publick, or a fair trial of its virtues ; as the bulk of mankind will much more readily follow the directions of a man who professes to cure them by myſterious means, than of a regular phyſician, of eſtabliſhed honour and capacity, who preſcribes ſuch plain things as their own common ſenſe may ſhew them the propriety of. It is further alledged, that ſome of the beſt remedies in medicine were originally introduced as ſecrets, though diſcredited by the regular phyſicians. But allowing all this to be true, yet I am perſuaded, that theſe noſtrums, on the whole, do much more hurt than good to mankind ; that they hinder the advancement of the art, by making people neglect what is known and eſtabliſhed, in purſuit of what is unknown and never to be divulged ; that, by heating the imagination, they impoſe on the judgment,

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and confound the science with a multitude of false facts ; and that, from their being generally kept in the hands of worthless and illiterate men, who prescribe them indiscriminately, they are one of the greatest public nuisances under which we labour in Great Britain.—In some places on the continent of Europe, physicians of established honour and reputation keep nostrums. In such hands, the same abuses will not be committed, as we experience here ; but the practice has an interested and illiberal appearance.

I shall conclude this subject with some observations on a charge of a very heinous nature, which has been often urged against our profession ; I mean infidelity and contempt of religion. I think the charge absolutely false, and will venture to assert, that the most eminent of our faculty have been distinguished for their regard to religion. I shall only mention, as examples, Harvey, Sydenham, Arbuthnot, Boerhaave, Stahl, and Hoffman.

man.—It is easy, however, to see whence this calumny has arisen. Men whose minds have been enlarged by extensive knowledge, who have been accustomed to think and reason upon all subjects with a liberal and generous freedom, are not apt to become bigots to any sect or system whatever. They can be steady to their own principles, without thinking ill of those who differ from them; but they are particularly impatient of the authority and controul of men who pretend to lord it over their consciences, and to dictate to them what they are to believe in every article where religion is concerned. This freedom of spirit, this moderation and charity for those of different sentiments, have frequently been ascribed, by narrow-minded people, to secret infidelity, scepticism, or, at least, lukewarmness in religion; while, at the same time, some men, who were sincere and devout Christians, exasperated by such reproaches, have expressed themselves sometimes in an unguarded manner,

ner, and thus given their enemies an apparent ground of clamour against them. This, I imagine, has been the real source of that charge of infidelity so often and so unjustly brought against physicians. In a neighbouring nation, where few people have been used to think or reason with freedom on religion, and where, till of late, no man durst express himself with freedom on the subject, some ingenious and spirited writers have, within these few years shone forth, who, impatient to shew their newly-acquired liberty, have attempted to shake the foundations of all religion, natural as well as revealed. Lately emancipated from superstition, by a transition not unusual, they have plunged at once into Atheism. It is happy for mankind, that these people have carried matters this length; because the evil must very quickly cure itself. Mankind may have their religious opinions diversified by various superstitions; but religion is natural to the human mind, and every attempt to eradicate it, is equally wicked

wicked and impotent. But supposing that Atheism came universally to prevail, together with the disbelief of a future state of existence, of the immortality of the soul, and what has generally been thought intimately connected with it, of its immateriality, the duration of such sentiments would necessarily be very short; because they would at once unhinge all the bonds of society, and produce a scene of universal anarchy, wickedness, and despair. Yet sorry I am to say, that at present they are making a very alarming progress. Divested of that uncouth, metaphysical dress, under which they long lay concealed, the gloomy entertainment of a few recluse men, void of sensibility, and abstracted from the business of human life, they are now produced to the world, adorned by all the arts of eloquence, wit, and humour, and perfectly adapted to the capacities of petit-maitres and chamber-maids. So far as they contain any argument, their futility has been demonstrated a thousand times over; but

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indirect hints, insinuations and ribaldry are unanswerable. The method taken by the present patrons of infidelity to propagate their opinions is extremely dangerous. With a matchless effrontery, they insinuate, that all who avow their belief in natural or revealed religion, are either hypocrites or fools. This is attacking youth upon a very weak side. A young man, of a high and liberal spirit, disdains the idea of hypocrisy; and, from an ill-judged pride, is afraid of whatever may subject him to so mean an imputation. Vanity, again, is the most universally ruling passion among mankind, especially among young people, who commonly dread contempt above every thing, and resent any reflection on the weakness and narrowness of their understandings, much more than any imputation on their principles or morals. But I will venture to affirm, that men of the most enlarged, clear, and solid understandings, who have acted in life with the greatest spirit, dignity, and propriety,

ety, and who have been regarded as the most useful and amiable members of society, have never been the men who have openly insulted, or insidiously attempted to ridicule the principles of religion; but, on the contrary, have been its best and warmest friends.—Medicine, of all professions, should be the least suspected of leading to impiety. An intimate acquaintance with the works of nature elevates the mind to the most sublime conceptions of the Supreme Being, and at the same time dilates the heart with the most pleasing prospects of Providence. The difficulties that must necessarily attend all deep enquiries, into a subject so disproportionate to the human faculties, should not be suspected to surprize a physician, who, in his daily practice, is involved in perplexity and darkness, even in subjects exposed to the examination of his senses. Yet such is the inconsistency sometimes found in characters, that we find examples of men disputing the evidence of the most interesting principles of religion,

religion, who, in the business of common life, betray a childish credulity; and who embrace, with the most enthusiastic attachment, such theories, as are the mere sportings and vagaries of a lively imagination.—But there are some peculiar circumstances in the profession of a physician, which should naturally dispose him to look beyond the present scene of things, and engage his heart on the side of religion. He has many opportunities of seeing people, once the gay and the happy, sunk in deep retired distress; sometimes devoted to a certain, but painful and lingering death; sometimes struggling with bodily anguish, or the still fiercer tortures of a distracted mind. Such afflictive scenes, one should suppose, might soften any heart, not dead to every feeling of humanity, and make it reverence that religion which alone can support the soul in the most complicated distresses; that religion, which teaches to enjoy life with cheerfulness, and to resign it with dignity. A physician, who

has the misfortune to be cut off from the happy prospects of futurity, if he has common good nature, will conceal his sentiments from those under his charge, with as much care as he would preserve them from the infection of a mortal disease. Fortified with insensibility, or ardent in the pursuits of business or pleasure, he may not feel in how forlorn and melancholy a situation he himself is placed; but it is barbarous to deprive expiring nature of its last support, and to blast the only surviving comfort of those who have taken a last farewell of every sublunary pleasure and connection. If motives of humanity, and a regard to the peace and happiness of society, cannot restrain a physician from expressing sentiments destructive of religion or morals, it is vain to plead the obligations of politeness, and the decency of his profession. The most favourable construction we can put on such conduct, is to suppose, that it proceeds from an uncontrollable levity of mind, or an unbounded

unbounded vanity, that forgets all the ties of morals, decency, and good manners.

I shall make no apology for seeming to go out of my way in treating of so serious a subject; because I think I stand in no need of one. In an enquiry into the office and duties of a physician, I thought it necessary to wipe off a reflection, which appeared to me derogatory to our profession; and, at the same time, to caution you against that thoughtless levity, or ridiculous vanity, in conversation, which may give ground to imputations of a dissoluteness of principle, equally dangerous to society, and to your own truest interest and honour.

IV. I proceed now to explain the connection of the several branches of physic with the practical part of it, and to enquire how far a previous knowledge of these is necessary, in order to practise with reputation and success.

Here I must previously observe, that though the whole works of nature are so intimately connected, that no one part of them can be perfectly understood by considering and studying it separately by itself; yet these links of the chain that are nearest to it, must be particularly attended to. In order to be qualified for the practice of physic, a variety of branches of knowledge, seemingly little connected, are extremely necessary. As this is the case, it is very proper that a student should be on his guard not to waste his time and labour in pursuits which have **either** no tendency, or a very remote **one**, to throw light on the main ends of his profession. Human life is too short to leave room for every study that may be deemed ornamental to a physician; it will not even admit time for every study that has a remote connection with physic. Every one of the sciences I am going to name, considered separately, are of infinite extent; but it will be necessary for
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a physician to limit his application and attention to each of them, within certain bounds: he must confine his views to such parts of them, as are really subservient to the ultimate end of his profession. If a student's genius leads him to a particular attachment to any of the preliminary sciences, he may, if he pleases, indulge himself in the study of it, in its utmost extent and application; but then he should not impose on himself, and consider this as studying physic.—The study of physic is the study which qualifies a man for being a physician.

The absolute necessity of a previous knowledge of anatomy to the practice of physic, is apparent at first view, and needs no illustration:

The necessity of the knowledge of physiology, which comprehends the doctrine of the animal fluids, and of all the animal functions, in their sound state, is equally evident.—When you enquire into

this subject, you find the human body a machine, constructed upon the most exact mechanical principles. In order, then, to understand its movements, you must be well acquainted with the principles of mechanics. Considering the human body in another view, you find fluids of different kinds circulating through tubes of various diameters; and therefore find, that the laws of their motions cannot be understood, without a previous knowledge of the principles of hydraulics. In the same way, the eye appears to be a most admirable optical machine; and the phenomena of vision are found inexplicable, without a knowledge of the principles of opticks.—As the human body is surrounded with a heavy elastic fluid, the air, subject to various changes, in respect of gravity, heat, moisture, and other qualities which greatly influence the human constitution, it is proper to be acquainted with the nature and properties of this fluid; which makes the science of pneumatics. It were easy to
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adduce many more examples, to shew how absolutely necessary a knowledge of the various branches of natural philosophy is to the right understanding of the animal oeconomy, both in its sound and morbid state.

But the different phenomena of the animal oeconomy are not all to be explained upon common mechanical principles; various changes are induced upon the fluids, in consequence of chemical principles. It is, therefore, necessary to be acquainted with the chemical history of the animal fluids, with the chemical history of whatever is taken into the human body as food or physic, and, in general, of all the substances which can, in any degree, influence it. This shews the necessity of a knowledge of chemistry, previous to the study of the practice of physic.

Yet the most accurate knowledge of anatomy, and of the principles of mechanics

chanics and chemistry, are insufficient to explain all the phænomena in an animal body. The animal machine differs in many respects from an inanimate one. The former has a power of beginning motion within itself. An internal principle directs and influences the whole operations of the human body, by a set of laws totally distinct from, and independent of, any principles of mechanics or chemistry hitherto known. Many feeble and impotent attempts have been made to explain the phænomena of the animal body by mechanical and chemical principles, but without the least shadow of success. The laws of the mental system are of the most difficult investigation; yet are equally steady and regular with any other laws of nature. An animal machine likewise differs from a common machine, in having a power, to a certain degree, of curing its own disorders, and of rectifying any deviations from its healthy state. As in the case of fractured bones, incarnation of wounds,

wounds, enlargement of one kidney when the other is destroyed, and in the successful efforts of nature in the cure of many diseases.

In order to illustrate the human physiology, a knowledge of the comparative anatomy of some animals, that most nearly resemble man, is extremely requisite. Several of the most important discoveries in the animal oeconomy, have been made or illustrated by observations or experiments first made on brutes, many of which it was impossible to have made on the human subject, e. g. the experiments relating to the circulation of the blood, respiration, muscular motion, sensibility and irritability of different parts of the body, and the effects of various medicines. The instincts of brute animals have often given the first hint of very valuable remedies, and might throw great light on the subject of regimen, and the cure of many diseases, if they were properly attended to. At

the same time it must be acknowledged, that the comparative anatomy of other animals has often led into great mistakes, by too hastily transferring it to the human body.

The writers on physiology have usually considered the human body as a fixt, permanent subject, exhibiting uniformly the same appearances; but, in applying the knowledge of the animal oeconomy to practice, it is necessary to consider the human constitution, as perfectly fluctuating, and not, perhaps, exactly the same in any two people upon earth. It were endless to trace the infinite diversity of constitutions among mankind, neither would it be an enquiry of great utility; but there are some varieties which it is absolutely necessary to attend to. These depend chiefly on the difference of age, sex, climate, and manner of living; and some original temperaments, or habits of body, not produced by any of these circumstances.

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It belongs to physiology to enquire into the laws of the union between the mind and the body; into the effects of culture and education upon the constitution; into the power of habit, the effects of enthusiasm, and force of imagination. This short detail shews how extensive a study physiology is, and how intimately connected with the study of the practice of physic,

As physiology considers the whole appearances of the animal oeconomy in its sound state, pathology considers the appearances in a morbid state. It delivers the general doctrine of the causes, effects, and symptoms of diseases. The therapeia treats of the general laws to be observed in the cure of diseases, and of the general nature of the remedies applied for that purpose. This includes surgery and the materia medica. The immediate usefulness of a knowledge of the principles of mechanics, appears most evidently in the practice of surgery.

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This art has, in fact, received the greatest improvement within these hundred years, since the doctrine of mechanics came to be more generally understood.

A knowledge of the materia medica is intimately and immediately connected with the practice of physic. It contains the doctrines of the instruments with which a physician operates, and a history of the effects of medicines. In this branch the use of chemical knowledge is very apparent. It teaches how to preserve and separate the useful parts of medicine. But in pharmacy, the knowledge of chemistry is indispensable. For want of this knowledge, at least for want of a proper application of it, pharmacy has, till of late, been disgraced by the grossest blunders.

The effects of medicines on the human body are sometimes explicable upon mechanical, sometimes upon chemical, principles; but much oftener depend on the effects

effects they produce upon the nervous system. An enlarged knowledge, therefore, of mechanics, chemistry, and physiology appear necessary to a physician, in order to enable him to explain the phænomena of the animal oeconomy, both in its sound and morbid state, and likewise to explain the operations of remedies.

The science of botany is subservient to the practice of physic, so far as it facilitates the knowledge of plants, by reducing them into the most commodious and perfect system; and though it is not necessary for a physician to be particularly acquainted with the name and history of every plant he meets with, yet he ought to be so well founded in the principles of botany, as to be able to find its place in the system, and to describe it scientifically; and he ought to be acquainted with every material circumstance relating to those plants, which are either used in diet or as medicines. The same obser-
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vation I have made, with respect to the knowledge of botany necessary to a physician, is equally applicable to every other branch of natural history.

I have now shortly explained the connection of the several branches of physic, with the praxis medica, which comprehends the hygiene, or the method of preserving health and prolonging life, and the application of general pathology, and general therapeutics, to the history and cure of particular diseases.—It will naturally then be asked, is a person entirely unqualified for the practice of physic and surgery, who is not master of all these branches of learning, which have been alledged to be necessary preliminaries? To this it may be answered, that one may, in some measure, practise physic, as he may do a mechanic art, without any knowledge of its principles. A sailor may navigate a ship, who is ignorant of the principles of navigation; and a person may construct a dial, who

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knows nothing of the principles of astronomy, spherical trigonometry, or the projection of the sphere. It is the same in all the other practical arts of life; and yet in all these, there are obvious advantages arising from a knowledge of the principles on which they are founded. But in medicine, the necessity of being acquainted with the principles of the art is much greater; because there can be no general rules laid down for the practice of physic, which can be applied in all cases. Differences of age, constitution, climate, and a thousand other circumstances, occasion necessary variations in the application of the most distinct rules that can be prescribed; and without a knowledge of the principles of his profession, and without extensive medical erudition, a physician must be at the greatest loss in making these deviations. It will be readily acknowledged, that there have been many physicians, eminently successful in practice, who, at the same time, were shamefully deficient in the

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the knowledge of the foundations of medicine. But this has been owing to their uncommon natural genius and sagacity, which enabled them to apply what little knowledge they had with judgment, and consequently with success; while, perhaps, another physician of very extensive reading and knowledge, for want of this natural genius and sagacity, has blundered egregiously in his practice, by a wrong application of his knowledge, or by not knowing how to apply it at all. Besides, as medicine is so complicated a science, many of those who study it regularly, take a particular attachment to some of its preliminary branches, and these so far engage their attention, that they neglect their application to medicine, and likewise the study of the other branches. In consequence of this, some of our profession have been distinguished anatomists, chemists, and botanists, who, notwithstanding, have been very indifferent physicians. But surely it cannot thence be inferred, that their ill
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success in practice was owing to their skill in these sciences, which must be acknowledged by every man of sense and candor, to be highly useful to them in their profession as physicians.

I do not insist here on the absolute necessity of a minute knowledge of these sciences, in their utmost extent: nor could time be spared to acquire it. A particular acquaintance with the swell and appearance of the muscles, in all the various motions and attitudes of the body, is a study more necessary to a painter, or to a statuary, than to a physician; and, in this view, they ought to be the greatest of all anatomists. If chemistry is prosecuted, in its fullest extent and application, to all the useful and polite arts, it is a study that is boundless. So is botany, if one thinks it necessary to be acquainted with every circumstance relating to every plant indiscriminately that grows on the surface of the earth. It is therefore necessary, that a student, while

he endeavours to make himself master of the leading and fundamental principles of these sciences, should always have an eye to their particular application to his own profession, and bend his peculiar attention to that quarter.

On the whole, I hope it will appear sufficiently clear, that a physician, who understands the principles of his profession, who has an extensive acquaintance with every branch of natural knowledge connected with it, who properly applies his knowledge, and who has equal natural genius, and equal attention to practice, must have an infinite advantage, as a practical physician, over one who is ignorant of the principles of medicine, and of every science connected with it. Genius and sense are, indeed, the peculiar gifts of Heaven, and cannot be acquired by the most extensive learning, or the greatest efforts of industry. But with these assistances, genius and sense are capable of the highest improvement;

ment; and without them, the finest parts will turn to little account, either to the public or to the individual.

Besides the above-mentioned branches of learning, which are in a manner essential to qualify one for the rational practice of physic, there are others, which, though perhaps rather ornamental, a physician, who aims at having a liberal education, should not be ignorant of. I hope I have no need to enforce to you a thorough acquaintance with the Latin language. A physician's reading must be confined within very narrow bounds, who is unacquainted with what has been the universal language of the learned in Europe for so many ages, and which serves to communicate their sentiments, from one nation to another, so easily and quickly. The interests of learning will very soon suffer by its disuse, and by the present fashion of authors writing in their own native language. But I must here take notice of an error,

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which they who value themselves on their knowledge of Latin are apt to fall into; and which has contributed, beyond any thing, to this growing evil. What I mean, is, too great anxiety about classical purity, and elegance of expression. The intention of language is to convey our ideas with clearness, force, and precision. If these can be joined to a style truly classical, it is a great additional beauty; but, from the numerous improvements made by the moderns in all the arts and sciences, there have arisen many ideas and objects, which the Roman classics could have no expressions for; because they did not know them. An author, therefore, who has occasion to express these ideas, is under a necessity of latinizing words in his native language, in order to express his meaning, or of adopting Latin words used only by authors of inferior note. If he is determined to use no phrase but what is strictly classical, he must often suppress altogether what he would wish to say;

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or if, by aukward straining, he grasps at a meaning, what honour he gains by elegance of diction, he must lose in the more substantial points of energy, precision, and perspicuity. We have the peculiar felicity in our profession, of having a standard in Celsus, for purity and elegance of medical Latin ; but there are still a number of medical ideas to be expressed, which neither Celsus, nor any Roman writer ever dreamt of.

I must here recommend to you the study of that copious, expressive, and harmonious language, the Greek. Our oldest, and some of our best, authors wrote in Greek ; particularly Hippocrates, the father and founder of medicine. Almost all the medical terms of art are Grecian ; a knowledge, therefore, of that language must evidently facilitate your progress in your own profession. Besides, it is not very decent for a physician, liberally educated, to be in the

daily use of terms, to whose original he is an utter stranger.

The necessity of a knowledge of the French language is very apparent. Almost all the French authors, many of whom are very valuable, write in their own language; it is likewise become so universal in Europe, that every gentleman who goes abroad, must necessarily make himself master of it.

It may appear at first view very superfluous, to recommend an attention to your own language. But it is notorious, that many physicians, of real merit in their profession, have exposed themselves to the ridicule of the world, by their ignorance or inattention in respect to composition. It might be expected, that every one who has had the education of a gentleman, should write his own native language, with at least grammatical exactness; but even in that respect, many
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of our writers are shamefully deficient. Elegance is difficult to attain; and, without great taste, very dangerous to attempt. What we principally require in medical writings, is the utmost degree of perspicuity, precision, simplicity, and method. A flowery and highly-ornamented language in these subjects, is entirely out of its place, and creates a very just suspicion, that an author is rather writing from his imagination, than copying from nature. We have many bulky volumes in medicine, which would be reduced to a very narrow compass, were they stripped of all their useless prefaces, apologies, quotations, and other tawdry ornaments, and confined to the few facts they contain, and to close inductive reasoning.—What I would principally recommend to you in every species of medical writing, next to a simple and candid history of facts, is a strict attention to method. I am no admirer of that pedantic display of system and arrangement, so remarkable in some of the Ger-

man writers, who split every subject into endless divisions and subdivisions. This strikes a reader, not accustomed to such kind of writing, with an high opinion of the author's ingenuity and accuracy; but in general it is a mere deceit. It is a mode of writing easily attained, and was in the highest perfection when the scholastic logic, which indeed consisted rather of nominal than real distinctions, was held in general admiration. Yet this ostentation of method, even when carried to the greatest extreme, is highly preferable to the present fashionable way of writing in Great Britain, which seems to set all order at defiance. In the one style of writing, what is important, what is defective, and what is erroneous, is more easily detected: in the other, there is such a profusion of words, such a promiscuous jumble of facts and reasoning, and wit and flowers of rhetoric, that it requires a very attentive perusal of a book from beginning to end, to find out whether it is worth perusing or not.

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It would require too much time to enumerate all the other qualifications that might be deemed ornamental to a physician. In general, there is no reason why he should be excluded from any amusement, or any genteel accomplishment, that becomes a gentleman. On the contrary, these give an agreeable relaxation from the severer studies and fatigues of his profession; they render his conversation more chearful and entertaining; and, instead of that aukward pedantry, which modern men of learning have generally chosen to distinguish themselves, they diffuse a liberal, ingenuous, and elegant air over his whole manners.

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IN TWO VOLUMES
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Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, near St. Dunstons Church, in the County of Middlesex.
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LECTURE II.

I. **T**HE works of nature are of infinite extent and variety: but amidst all this variety, there is such an intimate connection, that no one part can be thoroughly understood by studying it entirely detached from the rest. In our enquiries into the various branches of the works of nature, there are certain general views, and certain general principles of investigation, to be particularly attended to. The general views to be attended to, in the study of nature, respect, 1. The advantages it brings to individuals. 2. Public utility.

1. The advantages to individuals, that attend enquiries into nature, are sufficiently

ciently obvious. They give exercise to many of the active powers of the mind; they gratify curiosity, the love of truth, and of whatever is great, beautiful, or wonderful: principles deeply implanted in human nature.

2. In regard to public utility, they promote all the useful and elegant arts, all the arts that tend to the happiness and ornament of human life. A profound knowledge of nature extinguishes pride and self-conceit, by rendering men more deeply sensible of their ignorance, their errors, and the very limited state of their faculties. It is favourable to the interests of religion, by exhibiting the most striking proofs of the infinite wisdom, power, and benignity of the Supreme Being, who supports this wonderful frame of things, by laws often, indeed, unsearchable in their nature by human wisdom, but steady and uniform in their operation, and admirably fitted to promote the happiness of his creatures. Such a knowledge

ledge must impress every heart, endued with the least portion of sensibility, or not strangely perverted, with that awful veneration, that love and gratitude to the Divinity, that submission to his providence, and that reliance on his goodness, which constitute the soul of devotion. It has been imagined by some, that very extensive knowledge led to Atheism; but there is not the least reason for such a suspicion. A little learning is, indeed, a dangerous thing to a weak and conceited man, who, from a superficial acquaintance with second causes, is apt to overlook the first and great cause. But to a sound understanding, extensive knowledge is the truest teacher of humility; it shews how often men are deceived in their supposed acquaintance with second causes; and that, even where many of these are clearly ascertained, yet, in tracing the chain that connects them, the most acute and profound genius must stop somewhere, and at last refer them to a supreme intelligent cause.

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While we attempt, however, to clear philosophy from the charge of impiety, a very important distinction must be attended to. I will venture to maintain, that those philosophers have been the firmest supporters of religion, who have employed their genius and application in the investigation of the works of nature, and whose views in science have been grand and extensive. Among a multitude of examples I could bring to prove this assertion, I shall only mention three of our own countrymen, Lord Bacon, Mr. Boyle, and Sir Isaac Newton. Those philosophers, on the other hand, who have been the most distinguished propagators of Atheism, have been men little acquainted with the works of nature, who searched for truth in their own little minds, not in the great world without them; men who, in regard to science and the useful arts, have either neglected them altogether, instead of promoting them by observation and experiments, or corrupted them by metaphysical subtleties,

tleties, often indeed ingenious and plausible, but that lead to no useful discoveries or improvements.

II. There is no branch of natural knowledge so useful or interesting, as that which relates to the human species; which is evident, when we consider that it includes,

1. Medicine, or the art of preserving health, of prolonging life, or of curing diseases.

2. The arts of improving the different faculties of the human body; as strength, agility, endurance of pain, cold, hunger, and the many other evils mankind are subjected to.

3. The preservation and improvement of beauty.

4. The laws of union between the mind and body, and the mutual influence they have upon one another. This is
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one of the most important enquiries that ever engaged the attention of mankind, and almost equally necessary in the sciences of morals and medicine. It comprehends,

(a) The doctrine of the preservation and improvement of the different senses, external and internal, the memory, imagination, affections, and judgment.

(b) The history of the power and influence of the imagination, not only upon the mind and body of the imaginant, but upon those of other people.

(c) The history of the several species of enthusiasm.

(d) The history of the various circumstances in parents, that have an influence on conception, and the constitution and characters of their children.

(e) The history of dreams, with a view to our acquiring a power over them.

(f) The

(f) The history of the power and laws of custom and habit.

(g) The history of the effects of music, and of such other things as operate upon the mind and body, in consequence of impressions made on the senses.

(h) The history of natural signs and language, comprehending the doctrine of physiognomy and outward gesture.

I mention these only as a specimen, and not as a full enumeration of the many important articles contained under the natural history of the human species. I mention them as examples of the general views to be regarded in our investigation of nature, and very essentially connected with the science of medicine; but have taken no notice of the enquiries that relate to man in his moral, political, or religious capacity, as being quite foreign to my profession.

III. I proceed now to lay down certain general principles, which require our attention in the investigation of nature, and shall endeavour to apply them more particularly to the science of medicine. When we look round us in the world, we find objects connected together, in a certain invariable order, and succeeding one another in a regular train. It is by observation and experience alone, we come to discover this established order and regular succession in the works of nature. We have all the evidence that the case admits of, to persuade us that nothing happens by chance: on the contrary, we have all possible reason to believe, that every event happens in consequence of an established and invariable law; and that, in cases perfectly similar, the same events will uniformly take place.

IV. Here I must observe, that, antecedent to all reasoning and experience, there is an original principle implanted in the human mind, whereby it is led to
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a belief of the regular course of nature. In consequence of this principle, whenever a child sees any event succeeding another, he has an instinctive persuasion, that the same event would succeed it afterwards in the same circumstances. This persuasion does not flow from any connection he sees between the causes and effects, nor from experience, nor from reasoning of any kind. So ardently do we desire to find every thing that happens within our observation, thus connected with something else, as its cause or occasion, that we are apt to fancy connections upon the slightest grounds: and this weakness is most remarkable among the ignorant, who know least of the real connections established in nature.— A principle of credulity seems likewise to be an original instinctive principle of the human mind, by which we are disposed to believe, prior to experience, not only the language of natural signs, but the language of artificial signs, as soon as they come to be understood. Hence

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credulity is so peculiar to children, who at first believe every thing that is asserted to them to be true; and it is experience alone which teaches them to correct this original principle of belief. Dr. Reid has treated this subject with great exactness, in his ingenious Enquiry into the human mind.

V. We obtain experience, either by the evidence of our own senses, or by the testimony of others.

1. The testimony of our senses, though generally considered as the highest degree of evidence, often deceives, and often fails us. The sensations excited in us, in consequence of impressions made on our organs of sense, depend,

(a). On the state of the medium through which the communication between the objects and the organs of sensation is made, e. g. the state of the air, when we speak of visible objects.

(b). On

(b) On the state of the organs of sensation themselves, every one of which may be vitiated in a variety of ways.

(c) Our unassisted senses often fail us, on account of the subtlety or minuteness of bodies, too quick or too slow motion, the object being too common, and many other causes.

(d) Although the impression is properly made on organs that are in their sound state, yet the ideas conveyed thence to the mind, may be so varied and modified by the imagination, as to mislead the judgment entirely. Thus every part of natural history, and medicine above all others, is overwhelmed with facts, attested by eye-witnesses of undoubted honour, which, notwithstanding, had never any existence, but in their over-heated imaginations.

2. The experience which we trust to from the testimony of others, is liable to the same imperfections with our own

personal experience, and often to the additional inconvenience, of our uncertainty of the accuracy or honesty of our authors.

VI. Having examined the sources of experience, I shall now proceed to consider the manner in which mankind agree in applying it. I have already attempted to explain the principles that lead men to believe that, what they have seen happen in one case, will happen again in the same circumstances, and that the same causes will always produce the same effects. Whatever are the principles of their belief, the fact is true, both with regard to the most profound philosopher, and the most ignorant peasant. The only difference between these two consists in this; the peasant concludes two cases to be precisely alike, because they resemble one another in their most obvious appearances; the philosopher, on the other hand, from a more enlarged experience and observation, does not so easily trust

trust to obvious appearances ; he is aware of the various sources of deception, and therefore examines all the most minute and latent circumstances, before he ventures to pronounce the same judgment ; and the difficulty of ascertaining, with precision, the exact similarity of cases, makes every true philosopher extremely sceptical in forming conclusions of what will happen, from what he has seen happen.—An African, who has seen water in an infinite variety of circumstances, but still retaining its fluidity, concludes, that fluidity is essential to water, and looks on it as a lie, when he is told, that in certain parts of the world, water often appears in a solid form. His mistake here does not proceed from his trusting to experience, but from thinking he had experience, when in reality he had none. All that he could justly infer from his experience was, that water, in the circumstances under which he had seen it, would remain fluid. But water, exposed to a degree of cold sufficient to congeal

it, was a circumstance in which he never saw it; therefore his experience could never tell him, what effect that degree of cold would have upon the water, whenever it came to be exposed to it. We have a remarkable instance of the effects of trusting to a partial and limited experience, in that firm belief which people ignorant of medicine so frequently have in the wonderful effects of particular remedies, especially if they are kept as secrets. Many an old woman, and, what is more surprizing, many a grave philosopher, have infallible cures for a number of diseases, which every physician finds to be incurable. No physician indeed has the comfort of thinking himself possessed of an infallible cure, even for the scratch of a pin.

VII. Although facts afford the only solid foundation for genuine science, yet when we consider them as unconnected with any other, they convey but little useful instruction. The phænomena of nature are infinite, but the capacities of
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the human mind, and particularly the memory, is very limited. If these phænomena, therefore, were not reducible to certain general principles or laws, our experience of particular facts could do us but little service. But there is an instinctive propensity in the human mind, to be delighted with analogies, to compare and connect facts that resemble one another, and by this comparison, to reduce them to certain general rules, to apply such general rules to account for other effects, or to direct us in the production of them. The business of true philosophy is, in compliance with this natural propensity, to discover these connections, and to reduce them under certain general rules or principles, called laws of nature, by which we mean nothing else, but the most general facts relating to the operations of nature, which include a great many particular facts under them. The propensity of the mind to reduce particular facts to general laws, appears from the anxiety which men shew to discover the cause of

any uncommon event. The discovery of this cause infers no more, than the discovery of that law of nature, by which the event is produced; for we mean nothing by natural causes, but certain general facts or laws, with which, what we call effects are uniformly and invariably connected as consequences: but the nature of this connection we are perfectly strangers to. In our enquiries into nature, after we have arrived at the knowledge of some general laws, by an accurate comparison and arrangement of observations, we may, by comparing these laws together, discover laws of a more general nature; and thus, by a slow and cautious induction, we make advances to a knowledge of the most general laws, that regulate the system of nature, in all the different departments of the arts and sciences. But many obstacles concur to prevent the establishment of genuine philosophy upon this solid foundation; some of which I shall endeavour to explain.

1. The anxiety and impatience of mankind to reduce all knowledge, and to refer all events to certain general laws, makes them unwilling to submit to this slow, but sure, method of investigation. They attempt, therefore, a shorter way of establishing those laws, in which they are misled, either by a loose reasoning from imaginary analogies, or by supposing the laws of nature to be fewer and simpler than they really are. The consequences of which are, the hasty reduction of the sciences into systems, imperfect and corrupted in all their parts.

2. The pleasure that men have in observing analogies, makes them often fancy resemblances between things, where in truth there are none, or none of any consequence. Arguments from analogy very readily present themselves to a heated and fruitful imagination, while more direct and conclusive arguments, drawn from observation and experiments, often require painful attention and application,
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and perhaps, after all, are insufficient to establish the wished-for principle or doctrine. I shall readily acknowledge the usefulness of analogies; they often facilitate the conception of things, which, without their assistance, could not easily be comprehended. It is likewise by reasoning from analogies, that we are most commonly led to the anticipations of the most useful principles and discoveries. But we ought never to acquiesce in analogies, when we can have access to more direct evidence; as all that analogies generally lead to, are merely probable conjectures, commonly called theories, but more properly hypotheses.

3. There is a certain intoxication, that usually attends the supposed discovery of general principles in science, or useful inventions in arts, which renders men of warm and lively imaginations altogether blind to every difficulty that lies in their way, and often makes them artfully suppress them. The suppression

pression of facts, that appear to contradict a favourite hypothesis, is not always owing to want of candour in the author. Sometimes he does not see them, sometimes he despises them, and sometimes he conceals them, from the fear of giving people an unreasonable prejudice against what he thinks an important discovery. Every true philosopher, however, will be particularly jealous of himself in this respect; and whenever he gets a view of a theory, will immediately set his invention at work, to contrive every possible experiment and mean of proof, that can bring a direct and conclusive evidence, either of its truth or falsehood; and till such time as he can find such evidence, he considers his theory in no higher point of view than a probable conjecture.

This philosophical diffidence is so far from discouraging the investigation of causes and general laws, that, on the contrary, it greatly promotes it. A state

of suspense is always a disagreeable one, and the uneasiness it gives, becomes a powerful incitement to such further enquiries as may remove it. A zealous attachment to theories, may not only lead into very dangerous mistakes, but by betraying men into a false security, cuts off every motive to farther enquiry; representing it as an unnecessary piece of trouble. It is not philosophical scepticism, nor a humble opinion of our present knowledge, which checks the spirit of enquiry into the laws of nature; it is a mean opinion of the human powers, which effectually chills the ardor of genius, and blasts all grand and extensive views of improvement. In works addressed to the heart, that coldness and severe precision, so necessary in the investigation of truth, have no place; fancy there is in her proper element, and the loosest and wildest analogies may often be properly admitted. A philosopher may read a fairy tale with great delight, without the least reflection upon his

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his taste or understanding ; but it reflects severely upon both, if he reads with the same pleasure a philosophical investigation, not founded in observations and experiments, but in the vagaries of a lively imagination, unless he is sensible of its being a romance, and only allows himself to be charmed with the spirit or elegance of the composition.

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4. There is a species of self-deceit upon this subject, which deserves particular notice. We often find those people inveighing bitterly against theories and hypotheses in philosophy, who are most notoriously addicted to them, though not conscious of it themselves. This is most remarkably the case with medical writers, who commonly abuse all reasoning and principles in physick which differ from their own equally idle theory; and frequently declaim against theory in so vague a manner, as would seem to condemn all reasoning and investigation of causes and principles, as useless, and even pernicious.

cious. But it should be considered, that we cannot advance a step in the pursuit of knowledge, without reasoning. In every useful experiment, and especially in conducting a train of experiments, we must employ our reason; there must be some point in view, some anticipation of a principle to be established or rejected, and reason must determine all the circumstances to be attended to in making every observation, or experiment, with a view to ascertain this. Without reasoning, or without trusting to certain principles, either fully established, or rendered highly probable, we could never be benefited by experience, because we could never transfer it from the case we have seen, to the case immediately before us. For instance, I have a patient in an intermitting fever, which I propose to cure by the Peruvian bark. I shall suppose I have cured five hundred patients by this medicine formerly; but yet I know I never cured one whose circumstances, in respect of age, temperament, and every other particular, exactly corresponded to
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the one before me. If therefore I give the bark, I must reason, by tacitly adopting this principle, that the bark will universally cure agues, notwithstanding they differ in some circumstances. But this is a principle of which I have no direct and conclusive experience, but a principle which I have adopted, by a probable reasoning from analogy: and, indeed, it is not universally true, though physicians must proceed upon it in their practice, till such time as future observation shall ascertain the exceptions to it. Boerhaave, Hoffman, Stahl, and every systematic writer exclaim against theories, meaning one anothers theories; for each of them explains, though in different, and often opposite, manners, the proximate cause of every disease they give an account of, and the mode of operation of every remedy they prescribe, upon principles entirely hypothetical. Even Sydenham, though reckoned a purely practical writer, is full of hypothetical reasoning, which, however, had not the usual

usual effect of making him less attentive to observation; and, indeed, his hypotheses seem to have fit so loosely about him, that they either did not influence his practice at all, or he could very readily abandon them, and adopt new ones, whenever they would not bend to his experience.

VIII. It should seem, upon the whole, that all physicians must reason, and that the only difference among them consists in this, that some reason better than others. Some, for example, search into the causes of diseases, and the effects of remedies. Deeply sensible of the difficulty of the enquiry, and the various ways in which they may be deceived, they collect and arrange all the facts relating to the subject; when they have got a remote view of a leading principle, they attempt to bring a direct and conclusive proof, by experiment, of its existence. If the proof turns out against it, they see, and candidly acknowledge, that there is an error

error somewhere; if the case does not admit of a direct proof, they consider their principle as only more or less probable, but never relinquish the pursuit. These, I think, have a just claim to the title of rational physicians. Others, upon the foundation of a few facts, and vague analogies, create a system of hypothetical principles; a creative imagination supplies materials, where they seem wanting; they employ all their ingenuity to twist facts into a correspondence with them, and such as will not bend to their purpose, they either suppress or reject, as incredible. In their practice, they neglect particular observation; as they consider their general principles so thoroughly established, as neither to stand in need of confirmation, nor to be capable of refutation. Such people dignify themselves, with the title of rational and dogmatical physicians. But surely every system-builder, from the days of Hippocrates downwards, who has insisted himself among

the rational physicians, cannot have a right to this title; because their systems are different and contradictory. If one, therefore, is rational, all the rest must of course be contemptible. The truth is, nothing can be more absurd, than a physician's directing the method of cure in a disease, in the full confidence of his knowledge of the proximate cause, and the manner in which his remedies destroy this cause, when, in reality, he knows nothing of either. Some other physicians, who are stiled empirics, go upon a different plan: they lay it down as a principle, and a very false one it is, that the enquiry into the causes of diseases, especially proximate causes, and the enquiry into the manner in which remedies produce their effects, are both useless. Upon the experience of the success of a remedy in some particular cases, they venture to prescribe it indiscriminately in all others, where some of the most remarkable symptoms correspond, without any farther enquiry into the circumstances

stances in which they differ, or any other circumstance that can throw light on the nature of the disease. Here people deceive themselves, if they think they practise on the solid basis of experience. They are as much addicted to hypotheses, though of a different kind, as the dogmatists, and reason as absurdly. They are equally confident of principles, which are either utterly false, or true only in certain circumstances, and proceeding either from a luxuriant imagination, or a loose, erroneous induction from a few particular observations.

IX. I observed before, that in our enquiries into human nature, our impatience to acquire a knowledge of her laws, and a natural love of simplicity, makes us think them fewer and simpler than they really are. Enlarged knowledge certainly discovers that the laws of nature are perfectly uniform, and amazingly simple, if we compare them with the infinite extent and variety of her

works; but yet we must not think that they are confined within the narrow circle of our knowledge, or even comprehension. When Sir Isaac Newton, towards the end of the last century, demonstrated, by a happy effort of genius, that all the planets in our system gravitate towards the sun, by the same laws, and in consequence of the same principle, by which bodies on the earth gravitate towards its centre, many phænomena came to be explained by this simple law of gravity, of which formerly no account could be made. But it soon came to be applied to the explication of other phænomena, which afterwards appeared to happen in consequence of very different principles *. Des Cartes founded his system of the material world upon two principles, the existence of matter, and a certain quantity of motion originally impressed upon it. These two principles, however, were found insufficient, and it

* Dr. Reid.

has been made evident, that, besides these, we must admit the principle of gravitation just mentioned, cohesion, corpuscular attraction, magnetism, electricity, and other centripetal and centrifugal forces, by which the particles of matter attract and repel each other. Even Sir Isaac Newton was led by analogy, and the love of simplicity, to conjecture, but with a modesty and caution peculiar to him, that all the phænomena of the material world depended upon attracting and repelling forces in the particles of matter. But we have reason now to believe, that in this conjecture he was deceived: for even in the unorganized kingdom, the powers by which salts, crystals, spars, and many other bodies, concrete into regular forms, can never be accounted for by attracting and repelling forces in the particles of matter; and in the vegetable and animal kingdoms, there are evident indications of powers, of a different nature from all the powers of unorganized bodies.

We are conscious of an internal principle, which feels, which thinks, and which seems to be the original source of animal motions. We are, in a great measure, ignorant of its nature; but we know, that it has a system of laws peculiar to itself, and that, in consequence of its union with the body, certain effects are produced, which neither the laws of matter, nor of the mental system, considered separately, are able to explain.

X. We may here observe, how the different natural dispositions of men influence their literary character. We generally find men of lively imaginations, of keen and warm tempers, most disposed to attend to analogies, and the resemblances of things, in which fancy often deceives them. From these they are too ready to establish general principles, and to be so zealously attached to them, as not to see the objections that lie in their way. If, however, by any accident, their belief in the certainty of
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their principles comes to be staggered, they instantly relinquish them, while, perhaps, they may be very well founded, only embarrassed with some difficulties, which a little more patience and temper might have conquered. To such people the world often owes very useful discoveries, although they are seldom rewarded according to their merits. They are often ruined by projects, sometimes because they are too extensive, and beyond their abilities to execute; sometimes because they have overlooked some small circumstance necessary to their successful execution, which a very dull man, afterwards observing, robs them both of the honour and profit of their inventions. In fine, this exuberance of genius is generally attended with an impatience, that renders them incapable of a steady attention to observation and experiments, and a restlessness, which prevents their bringing any work to a conclusion, and makes them desert it in the middle,

or after the most difficult part is conquered, in pursuit of some new plan.

There is a species of genius very much the reverse of the former, calm, sedate, discriminating, that attends very accurately to the differences of things, seemingly alike; that watches the excursions of more lively and inventive spirits, and that too often exposes their mistakes to an undeserved ridicule. There are so few men of original genius who think for themselves, and strike out new paths in science, that they should meet with all possible encouragement, particularly when they propose their opinions with modesty, and a becoming regard to those from whom they differ. Men who go often out of the common road, must sometimes go astray; but as they frequently make important discoveries, their errors ought to meet with a great deal of indulgence, even though for some time they should be warmly persisted in,

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in consequence of that enthusiasm so peculiar to this kind of genius. The two dispositions I have been speaking of, are often found united in the same person in different degrees. One may possess that warm and lively imagination, so peculiarly fitted for invention, and, at the same time, a clear, accurate, and collected judgment, that can distinguish with great precision; that discerns every objection to his proposed plans; and that, according to the real weight of evidence, can either reject them altogether, or preserve his mind in a proper degree of suspense. This union, where genius and sound understanding are so happily blended, and which so seldom takes place, constitutes a philosopher of the first class and dignity.

But there is a numerous class of men, of considerable use in the learned world, who are mere drudges in science, who neither discern the resemblances nor differences of things, who have no views
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of principles, or plans of any sort, nor any ideas of method or arrangement. Some of these are industrious and painful compilers; some attend to observations and experiments, with great patience and assiduity, though these, under their own conduct, are so trite, so vague, or so inaccurate, that they seldom lead to any conclusions, or can be safely trusted. Their labours, however, when under the direction of men of genius, may be rendered highly useful.

XI. In collecting a natural history, which is supposed to be subservient to the useful arts, and to be the foundation of a useful natural philosophy, it is necessary to make a proper selection of facts, among the infinite number with which the volume of nature presents us. Our views then should be confined to those, which, being compared and properly arranged, may lead to general and useful principles. The history, therefore, of any extraordinary production of nature, which has
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nothing similar or analogous to it, is of little consequence but to gratify curiosity. Yet this principle of curiosity, and love of the marvellous, is so prevalent among mankind, that all extraordinary events, and *lufus naturæ*, are what principally attract their regard. If a puppy comes into the world with three or four heads, we have presently a very accurate anatomical description of the monster recorded in all the literary journals in Europe, though it is not a matter of the least consequence to mankind, whether the creature had four or forty heads. This love of the marvellous is very conspicuous in most writers of medical observations. We find them recording extraordinary cases, such as have nothing similar to them, such as never happened before, and, consequently, such as will probably never happen again, with a tiresome minuteness of description; while the symptoms that discriminate some common diseases from others of a very different nature, which resemble them,

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are far from being yet ascertained, although the lives of thousands have been lost from these distinctions not being established. I do not mean here to object to the recording extraordinary events in nature. They furnish a very innocent amusement, by indulging the natural taste of mankind for the marvellous, and I will readily allow, that they sometimes throw light on the laws of nature, in her ordinary course of proceeding. I only mean to censure this extravagant attachment to prodigies, when it makes us neglect enquiries of more general utility to mankind. It deserves likewise to be remarked, that all great lovers of the marvellous are remarkably credulous, and have such heated imaginations, that every prodigy swells under their description.

There is another kind of facts, which, published to the world by themselves, answer no end but to fill up a volume; I mean, facts which are universally known, and of which every one, who has
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the use of his eyes, may collect as great a number as he pleases. Medicine is oppressed with cases of this kind; single cases that have no useful point in view, that neither tend to distinguish the disease more exactly from others which it resembles, nor to illustrate its remote or proximate causes, nor establish its prognostic symptoms, nor to point out any better method of treating it than the common one, nor to ascertain the effects of any remedy.

The present fashionable taste for natural history, regards it more as an object of curiosity, than as the basis of a sound philosophy, subservient to medicine, agriculture, and the other useful arts. Every natural production is not only accurately described, but painted with the utmost elegance. We have now a superb folio, which contains nothing but the natural history of a frog, in which that animal is beautifully painted, in a great variety of attitudes.

We have many folios executed in the same magnificent manner, which contain the natural history of the Danube, and of every thing which is found upon its banks. In this unmeaning taste of accumulating natural history, it is evident that books may be multiplied beyond number, without bringing any accession of useful knowledge; that the expence of procuring them must exceed what any private fortune can afford; and that they can only be admitted into public libraries, where they may be exhibited like any other shewy piece of furniture.

XII. The advancement of the sciences has been much retarded, in consequence of the following causes.

I. Inattention to their ultimate end.

One of the chief causes that has obstructed the advancement of the sciences, has been an inattention to the principal end which should be kept in view in their cultivation: the end I mean is public utility;

utility, or what contributes to the convenience and happiness of life. Instead of attending to this, most men have no other object in the pursuit of knowledge, but to gratify a transient curiosity, or to give a variety to their amusements, or to serve the purpose of vanity and ostentation, or to gain a subsistence in the profession they live by. Perhaps there never was a science that has suffered so much as medicine, by the neglect of its ultimate end and purpose, which, as I before observed, was to preserve health, to prolong life, and to cure diseases. It has, indeed, made the slowest progress of any of the useful and practical arts; not, surely, from any deficiency of genius in physicians, but rather from exuberance, or misapplication of genius; nor yet from want of erudition, for no profession can boast of more men eminent for every branch of useful and polite literature, than physic. They have not only cultivated, with the greatest success, every science intimately connected with their own profession; such as anatomy, botany,

botany, chemistry, and the various branches of natural history, but have often distinguished themselves as poets, mathematicians, and philosophers. Yet how few physicians can we name, who, either by their genius or industry, have advanced the practical part of their own profession; how many, on the contrary, could we name, who have corrupted it, by the sportings of their own imaginations, dignified with the name of philosophy; and even checked the slow improvement, which time must naturally bring to every art founded on observation and experience. The reasons why medicine has made such slow progress, in comparison of the other practical arts, may be partly referred to the difficulty and intricacy of the art itself, and partly to some peculiar disadvantages which the profession lies under, which I shall afterwards endeavour to explain.

2. There is a certain metaphysical subtlety, which is not only useless in our enquiries

enquiries into nature, but does real mischief, by giving ingenuity and industry a wrong direction. This involved all science, for many ages, in darkness and endless controversies. It was carried to the greatest length by the schoolmen, many of whom having great acuteness, abundance of leisure, from their retired monastic life, little acquaintance with the best authors, and still less with the works of nature, spun out of a small quantity of matter, those cobwebs of learning, admirable, indeed, for the fineness of the thread, but of no substance or utility. As their writings consisted of nominal subtleties, and a play of words; as they occasioned perpetual wranglings, and led to no useful consequences, the wiser part of mankind became quite weary of them, and now the old school-philosophy has fallen into universal contempt. This philosophy corrupted no science more than medicine. From the days of Galen, till towards the end of the last century, all the institutions of physic were not

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only filled with the chimerical doctrine of elements and temperaments, but with such questions as these, whether the procuring of health be the design or end of medicine; whether disease is a quality or relation; and innumerable trifles of a like kind. They are generally disputes about words; and whenever the terms are defined, the controversy is at an end. It is a melancholy thing, to reflect on the industry, erudition, and genius, so copiously displayed in the writings of the old physicians, and so superior to what is generally met with, among those of the present age: at the same time, to find them wasted in such disputes as disgrace the human understanding, and employed in corrupting and embarrassing an art, that requires to bring it to perfection, rather attentive and sagacious observation, and a clear and solid judgment, than great metaphysical acuteness.

A useless subtlety may be displayed in two ways, either in the prosecution of
enquiries

enquiries of no importance, but difficult investigation, or by treating important subjects in a way that leads only to fruitless speculation and controversy. We have examples of the first in the old school-logic, and in most metaphysical disquisitions, ancient or modern. I acknowledge the usefulness of these disquisitions, considered as an exercise for young minds. They may sharpen the invention, strengthen and improve the reasoning faculty, and communicate a power of fixt attention and nice discrimination; but when long dwelt upon, they withdraw the attention from the study of nature and the practical arts, and beget a habit of wrangling upon every subject, extremely disagreeable in conversation; because it rather tends to confound than convince, and seems a contention rather for victory than truth. The habitual practice of balancing things, with a minute exactness and finical precision, is unfavourable to the enlarged views of genius, the advancement of the sciences, and the

successful management of business in private life. These require only an attention to probabilities, to leading principles, and the great outlines of objects, a quick discernment where the greatest probability of success lies, and habits of acting, in consequence of this, with facility and vigour.

Important subjects of enquiry are treated in a manner that leads only to fruitless speculation and controversy, when we waste our labour in a minute discussion of what are supposed necessary preliminaries, and points essentially connected with them, though, in reality, they have no connection at all, or a very remote one. It is the same useless labour, when we plunge at once too deeply into our subject, and attempt the investigation of causes, either beyond our reach, or such as, if known, could lead us to no useful consequences. Thus philosophers, before Sir Isaac Newton's time, were often attempting to explain the cause of gravity.

vity. That great man contented himself with investigating the laws according to which it acts, and only proposes a suspicion of its cause in the modest form of a query. The laws according to which gravity, magnetism, and electricity act, are a proper subject of enquiry; because they are within our reach, and because the knowledge of them leads directly to the most useful consequences: But their causes will probably ever escape our deepest researches, nor, perhaps, could the discovery be of the least utility. The laws of union between the soul and body is one of the most important enquiries in medicine; but the enquiry into the nature of this union, is equally obscure and unnecessary.

3. There is another species of useless subtlety, which consists in an extremely scrupulous exactness, in regard to arrangement and method. These should, without doubt, be particularly attended to in treating of any subject, but are pe-

peculiarly necessary in all the departments of natural history. The proper distribution of plants, and other natural productions, into their several orders, genera, and species, is a great assistance to the memory, and leads to important general observations, in relation to their virtues. But a compleat classification is a matter of the greatest difficulty, and can never be attained, without an exact knowledge of all the particulars proposed to be classed. It may be attempted upon different principles, as is the case with the various systems of botany, and though one of them may, upon the whole, be more perfect than the rest, yet each of them may have its own peculiar advantages. In the same manner, diseases may be classed according to their symptoms, their remote or proximate causes ; and in various other ways, all of them very imperfect, but each having its own advantages and disadvantages. Neither is it possible for human ingenuity to remove this imperfection, till such time as

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the knowledge of particular diseases, and the science of medicine, is rendered perfect. It is evident, therefore, that this subject of arrangement presents an ample field for endless disputes, where much ingenuity may be displayed; though, in fact, it is only in a specious kind of trifling. In this manner the attention is diverted from the study of diseases, and the most successful methods of treating them, to a fruitless speculation about the order in which they should be treated. I only call them fruitless, so far as they waste too much of that time and attention which might be more usefully employed. If we carry our studies in natural history no farther than to a just arrangement, what we have learned is of no more consequence, than the knowledge of a Greek grammar, and of all the words in a Greek dictionary, would be to one who was never to look into a Greek writer. I speak of natural history with real regret, because I see its principal purpose too much neglected. I see

it studied rather as a matter of curiosity, or as furnishing subjects of ingenious speculation, than as subservient to real utility. It is of little importance to settle the genus and species of plants, in comparison of ascertaining their uses; yet the one subject has been attended to very closely, the other has been worse than neglected, it has been corrupted by a multitude of false facts, especially in what relates to medicine. Much pains have been taken to place those worms that infest the human body in their proper ranks, and to examine their anatomical structure with the utmost accuracy; but little proportionable care has been taken to fix the certain symptoms of their existence in the human body, the effects they produce there, and the most effectual method of destroying them. I cannot, however, omit, on this occasion, doing justice to the merits of that great man, Dr. Linnæus, who has displayed so original a genius, in reducing all the subjects of natural history into the most perfect

fect and beautiful system. Dr. Linnæus did not stop here ; he has shewn the most enlarged spirit of observation, in applying natural history to the useful purposes of life, particularly agriculture and medicine.

4. The advancement of the sciences has been much retarded by a weak credulity in those who have cultivated them. This credulity discovers itself, in regard to particular facts, in a fond belief in the powers of certain delusive arts, in a bigotted attachment to some great names in the learned world, or in a superstitious veneration for antiquity.

(a) An easiness of belief, in regard to particular facts, by admitting them upon weak authority, has corrupted every branch of natural knowledge, but none of them so much as medicine. Facts depending upon the animal oeconomy, must be difficult to ascertain ; because they are subjected to all the varieties, which they
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are exposed to from a thousand nameless causes. A heated imagination, therefore, may easily fancy or magnify them, and fraud may easily forge or counterfeit them, when, at the same time, it is very difficult to detect the error. Hence our accounts of the effects of remedies still remain full of uncertainties and falsehoods; while many other branches of natural history, particularly chemistry, have of late been exceedingly well cleared of false facts. Medicine suffers much more from this cause than from fanciful theories. The weakness of a theory is easily detected. The clear understanding of one man is sufficient to do this. But there is frequently required the united labours of many to make a separation between facts that are fully and candidly represented, and such as are false or exaggerated; nor can it be done till such time as an opportunity offers of repeating the observation or experiment, perhaps at the risque of a patient's life. I do not mean to insinuate here, that no facts should

should be admitted into natural history, or medicine, but such as are thoroughly established. I mean only to shew the impropriety of jumbling uncertain reports and undoubted truths, without making a proper distinction between them. Whatever is asserted to be a fact, let it appear ever so extraordinary, and though the authority for it be but slender, yet it deserves to be recorded, untill an opportunity offers of ascertaining its truth; as nothing shews greater ignorance of nature, or more contemptible self-sufficiency, than the rejection of facts, merely because we cannot account for them.

(b) A fond belief in the powers of certain delusive arts, particularly astrology, natural magic, and alchemy, has greatly retarded the progress of knowledge, by engrossing the attention of many of the finest geniuses which the world has ever produced, and by introducing, into medicine especially, a multitude of false facts,

facts, founded on the grossest superstition and delusion. These arts, which promised to be of infinite use in life, laid such fast hold of the imagination, that no power of reason was able to free men from their enchantment. At the same time, they have accidentally given rise to important discoveries, and would furnish some excellent materials for a natural history of the human imagination.

(c) A bigotted attachment to certain great names in the learned world, has done remarkable mischief to science. The history of philosophy exhibits to us, from time to time, some man of distinguished ingenuity, who has erected a system. This system has been universally adopted for a few years. Learned men have commented upon it; some have explained it with the most insupportable diffusiveness; others have abridged it. In the mean time, none of those authors rose higher than their source; few of them so high. In the
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fucceſſion of a few years another original genius has ſtarted up, expoſed the weakneſs of his predeceſſor's ſyſtem, and erected another in its ſtead. This, after having the like honours paid to it by commentators, has funk, in its turn, into contempt and oblivion. This has been the fate of medicine, from the days of Hippocrates down to the preſent time, when there appears to be a general diſpoſition ariſing to throw off the ſhackles of authority, to appeal to nature in matters of fact, and to aſſert the right of private judgment in matters of opinion and reaſoning. I do not mean to inſinuate the poſſibility of every individual's thinking for himſelf in matters of ſcience. Nature never intended the bulk of mankind either to think or act for themſelves. I only mean to regret, that men, bleſſed with ſuperior talents, ſhould crouch to an authority they ought to have controuled, and ſhould tamely yield their aſſent to doctrines, which a little exerciſe
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of their own judgments would have shewn to be ridiculous.

(d) Another obstacle to the improvement of science, similar to the former, has been a blind and superstitious veneration for antiquity. It is inconceivable to those who are only acquainted with the present state of the learned world, and with the free spirit of enquiry in matters of science that now prevails, to what an absurd height this attachment to antiquity was formerly carried; how much it has cramped the efforts of genius, and retarded the progress of knowledge. Upon the revival of learning, all the ingenious men in Europe were employed in recovering, translating, and commenting on the remains of antiquity, which had escaped the ravages of time and barbarism, and lain for many centuries buried in the cells of monks. The world is infinitely obliged to the labours of these restorers of learning, which
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quickly dispelled that darkness and ignorance, which for above twelve centuries had overspread all Europe. The immediate effects produced by the recovery of the antient writers, shewed very clearly in what their principal excellency consisted. All the fine arts, painting, sculpture, architecture, rose very speedily to an amazing degree of perfection. Purity of language, and an elegant simplicity of composition, especially in poetry and history, were particularly studied; but natural history and natural philosophy remained miserably neglected. The reason was plainly this; in all works of taste and imagination, in poetry, in eloquence, in simplicity, correctness, and elegance of composition, the ancients possessed an excellence hitherto unrivalled. In abstract mathematics, likewise, they will ever remain as standards of that clearness and precision, which should be the peculiar characteristics of mathematical reasoning. But in natural history, and in natural philosophy, they were not equally successful.

successful. This was owing partly to their not having bestowed much attention on those subjects, and partly to those sciences depending for their advancement, not so much on the genius of one man, as on the accumulated labours of many. Thus a Homer, an Apelles, a Praxitiles, or Demosthenes, may have carried poetry, painting, sculpture, or eloquence, as high, or higher, than any who have succeeded them; because when these men died, their arts, in a great measure, died with them. But, in natural history and natural philosophy, the case is widely different; because every man, who applies to any branch of these sciences, may avail himself of the labours and improvements of his predecessors. As these sciences, then, at the revival of learning, were in a very low state; and as little light was thrown on them by the writings of the ancients, they continued to lie in a great measure neglected, till towards the middle of the last century; most men of learning and ingenuity, before that time, devoting all

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their attention to theological studies, the fine arts, and the different branches of polite literature.

The same warm admiration of antiquity which prevailed on other subjects at the restoration of learning, attached physicians to the ancient writers in their own profession. It had been happy for mankind if, instead of a blind and stupid admiration of Hippocrates, justly stiled the father and founder of medicine, they had imbibed some share of his enlarged spirit for observation. Hippocrates will always be held in the highest esteem, for his accurate and faithful description of diseases, for his candour, his good sense, and the simple elegance of his stile. But instead of prosecuting his plan, and building on the foundation he had laid, his successors employed their time in transcribing and commenting on his works. Galen began with writing most voluminous commentaries on what he reckoned the genuine productions of Hippocrates, in which he endeavours to reconcile all

his real and seeming contradictions, and to prove the truth of his observations by a variety of arguments, not drawn from his own extensive experience, but from the Aristotelian philosophy; some of them, indeed, subtle and ingenious, but for the most part trifling and sophistical. This manner of writing commentaries on a book consisting of observations, is extremely absurd. The first and capital enquiry here ought to be into the truth of the facts. Till these are established by corresponding observations, it is a useless waste of time and labour, to attempt an explanation of the causes of them. Hippocrates has left us a number of excellent observations; some that are found to be true only in certain cases, and under certain limitations; some that are false and ridiculous; and a great number that seem curious and important, which not one of his numerous commentators has taken the trouble to enquire, whether they were true or false. Every one of them has, after the example of Galen, attempted to prove the truth of his ob-

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servations, not by similar observations of their own, but by hypothetical reasoning; drawn from the prevailing philosophy of the particular times they lived in. Thus the noble foundation of observations begun by Hippocrates, and the example he has set of faithful and accurate description, have, in a great measure, been neglected, while physicians, in all ages, have been solicited to shelter all their theories of the most opposite kinds, all their sense and all their nonsense, under his authority, which the brevity and obscurity of many passages of his writings rendered a very easy matter. Not only his observations, but his opinions, (of which indeed he was very sparing,) were adduced, till very lately, to quash the authority of facts, which appealed for their truth to the experience of every man of candour and common sense; so that a physician, in writing his own observations, found himself under a sort of necessity to shew that they agreed with those of Hippocrates, at least that they

did not contradict them. The obvious effect of this was, that the truth of nature was often warped and perverted, in order to make it appear correspondent to the sentiments of Hippocrates, or the more worthless authority of Galen. This introduced a corruption into the very source and spring of all solid knowledge in medicine; and, at the same time, encouraged a pompous and useless display of learning in writing on medical subjects, that wasted the time and tired the patience of every reader, who wanted to know what nature said, not what Hippocrates and Galen thought, in medicine. Neither is this pedantry yet extinct in Europe; there being few medical books wrote in some parts of it, but what are stuffed with numerous quotations from the antients, containing some very trite observations, which answer no other purpose, but to make a parade of the author's erudition, and to swell the volume.

5. Another obstruction to the progress of science, the very reverse of the former, has been a fond attachment to novelty. This proceeds, partly, from a natural principle in the human mind, which is gratified, in a certain degree, with whatever is new, independent of any other consideration, partly from an anxiety to discover truth upon an interesting subject, which makes us often grasp a shadow for the substance, and partly from a disposition to believe whatever we earnestly wish to be true. The uncertainty of the methods of cure, in many diseases, makes patients, and sometimes physicians, very eagerly adopt any new method, that promises a more effectual and speedy cure. This is the cause of that universal propensity to give credit to the extravagant and exaggerated accounts of the effects of nostrums and quack medicines. These are recommended to a patient, with an assurance of infallibility, which no physician, who has regard to either honour or prudence, can in any case venture to

give. From the same cause we have seen, in our own times, many remedies loaded with encomiums, to which they had no title, becoming fashionable, for some years, in almost every disorder, and then sinking into neglect, such as cold water, crude mercury, rhubarb, soap, tar-water, lime-water, sea-water, Dr. Ward's medicines, and now many of the class of poisons. During the reign of these medicines, the public was amused with a belief that they were infallible, in the cure of almost all chronic disorders; and when time discovered the folly of this expectation, they were, with equal folly, laid, in a great measure, aside; as if a medicine could not be useful in the cure of some diseases, because it was not infallible in the cure of all. This attachment, however, to novelty, is not such a bar to improvement, as a superstitious veneration for antiquity. The former, from time to time, is bringing new accessions to knowledge; the latter keeps the active powers of the mind suspended
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in a stupid admiration of what, perhaps, was of some value in the infancy of science, but what is now known to every smatterer in learning. A physician of sagacity and coolness may derive great advantages to his art, by these temporary intoxications of the public, in regard to particular remedies, which he sees, but cannot prevent; as they give him an opportunity of ascertaining the real effects of some medicines, by allowing him to exhibit them in larger doses, and during a greater length of time, than patients would otherwise be persuaded to make trial of. The passion for novelty is particularly excusable in medicine; because it is natural for us to be pleased with what seems, not only to bring an accession to our stock of knowledge, but to communicate an important and useful discovery. But the discovery of our mistake is not an equally natural source of pleasure; because this makes no positive addition to our knowledge, but, on the

contrary, deprives us of what we thought we had once gained.

6. The hasty reduction of any science into a system, apparently full and perfect in all its parts, while, in reality, these parts are ill filled up and erroneous, is an effectual bar to its farther improvement. The intention of these systems is to place a science in such a light as may procure it most credit. It is, therefore, delivered in a pompous and magisterial manner, so as to gain belief without examination; and hence a science descends in the persons of master and scholar, not of inventor and improver. Men are generally attached to systems, because they free them from the impatience of doubting, and promise them fixed and certain principles, on which their minds may securely rest; and teachers find it contributes both to their interest and reputation, to reduce the sciences into systems, as seemingly compleat as possible. A man who ap-
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pears perfectly well acquainted with the principles of a science, and who seems to entertain no doubt of their soundness, makes a more shewy appearance, than one who doubts them, and owns fairly he does so. The bulk of mankind are not judges of the merit of men of science, and are ready enough to allow them that consequence, which they take to themselves, if vanity does not make them greatly overshoot their mark. I have before endeavoured to shew the propriety of prosecuting enquiries into nature upon a regular and methodical plan; in teaching a science, it is equally necessary to proceed upon a particular plan of arrangement. But till such time as all the facts, and all the principles, included in a science, are perfectly established, it is impossible to reduce it into the form of a compleat system; and there are many circumstances relating to arrangement, which, in the mean time, must remain undetermined. It is, therefore, sometimes better to use the loose aphoristical

aphoristical manner, than to attempt an order, where there are no certain principles to lead to it. It has been the fate of medicine to suffer, in a very particular manner, from this unfortunate disease of system-making. It has fallen, at different times, into the hands of Galenists, Chemists, Cartesians, Mathematicians, Stahlians, and some other sects compounded of these; each of whom have moulded the whole science of medicine into a system, seemingly compleat in all its parts. It has been tinctured with mystical divinity, astrology, and all the subtleties of school philosophy, according to the different attachments of physicians to those studies. But, notwithstanding the load of learned rubbish with which it has been incumbered by systems, a physician of a comprehensive genius and solid judgment, will be able to draw from them very useful information, although, in the view of compleat systems, he heartily despises them all.

7. The last impediment I shall mention to the progress of science in general, has been too great attention to purity and elegance of language, on the one hand; and, on the other, an affected obscurity and intricacy of style. In works of taste, and addresses to the passions, a language highly ornamented may be very proper; elegance, sublimity, pathos, are there in their proper place. But the language in which science is to be communicated, should be simple, perspicuous, and perfectly divested of all flowery and artificial ornaments. Original writers, who have new ideas to communicate, are often obliged to use new words and phrases, in order to convey their meaning more distinctly and forcibly; which surely they, and they only, have a right to do, provided they clearly define them. An affected obscurity and intricacy of style is now, in a great measure, banished the learned world. The use of technical terms, where others equally clear and expressive can be found, is regarded as pedantry,

pedantry, or a cloak to conceal ignorance. This censure may sometimes be carried too far, but in general it is well founded. That learned jargon, which so long disgraced philosophy, was introduced for the illiberal purposes of vanity, or the still more unworthy purpose of shutting up the avenues of science, from all who did not live by it as a trade. But it evidently hinders the advancement of science, when men attend more to words than things, whether it be in an affected and pedantic display of learning, or in a scrupulous regard to purity of diction, or elegance of composition.

XIII. Let me take this opportunity of recommending to your perusal the writings of Lord Bacon, who possessed, perhaps, a more enlarged and piercing genius, than any man who ever existed. He has explained the proper method of acquiring knowledge, and promoting science, with incomparable judgment and perspicuity. He has likewise left us
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some beautiful specimens of true philosophical induction, particularly in his History of the Winds. This, and some other of his essays in natural history, are to be considered in no other light, than as specimens of his method of carrying on enquiries into nature. The facts they contain are not to be depended on: he was obliged to take such as were generally believed, which, whether true or false, equally served the purpose of illustrating his method. He uses a language peculiar to himself: it is, beyond any other, the language fitted for science and philosophy, copious, clear, manly, and admirably expressive; but, unfortunately, incompatible with the affected delicacy of modern English, which has become more feeble, in proportion as it has become more smooth and polished.

XIV. I have thus endeavoured to explain some of the principal causes that have obstructed the progress of science in general; and, where it was necessary,
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have applied my observations particularly to phyfic. I thought it neceffary to explain to you my general fentiments, in relation to the improvement of knowledge; becaufe it gives me an opportunity of communicating my leading principles in the fcience of medicine. But before I conclude the fubject, a regard to truth and candour obliges me to take notice of fome peculiar difadvantages under which medicine labours, and which in particular have retarded its progrefs. This I do, not with any difpofition to find fault, nor from a defire to expofe the weaknefs of a profeflion, the honour of which my inclination, and many ties, lead me to fupport; but purely with a view to put you on your guard againft certain errors and inconveniencies, which otherwife you might be expofed to.

The particular difadvantages under which medicine has laboured, have arifen from the manner in which it has been ufually taught, and from its having been
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confined to a set of men who lived by it as a profession.

1. In the first place, the general method of conducting education, in universities where medicine is taught, does not seem so well calculated to advance science, as to diffuse it; not so well fitted to promote particular arts, as to communicate general principles. Those who teach the science often lay various nets for the understandings of their students. Sometimes with the laudible view of engaging and fixing their attention; sometimes with a desire to stamp a dignity on their own characters, by pretensions to discoveries, by the triumph of confutation, the ostentation of learning, or the mask of obscurity. For the conveniency of teaching medicine, it has been usual, in most universities, to lay down general doctrines and principles, relating to entire classes of diseases and remedies, and to mention particular facts, so far only as they serve to illustrate these principles,

ciples, or as they are clearly deducible from them. But the natural and genuine method of advancing a science is the reverse of the former, where we proceed from particular facts to establish general principles. Though, on a superficial view, it does not seem a matter of great consequence, in what particular way the knowledge of medicine is acquired; yet it will appear, on a nearer view, to have often an important influence on a physician's future character and studies. Medicine, as usually taught in colleges, instead of being represented as an art, imperfect in its most material parts; instead of having its deficiencies pointed out, with a view to their being supplied, is digested into a regular and perfect system. In this view it is beheld by the young student, who embraces theories, with the same facility and unsuspecting confidence as he would do facts; he thinks he understands the causes of all diseases, and the manner of operation of all remedies; his mind is at ease, in having always sure
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and fixt principles to rest on. In the mean time, the art has little chance to acquire any improvement from him, as he scarcely supposes it stands in need of any. When a patient dies, he is quite satisfied every thing was done for him that art could do. It is difficult and painful for men to give up favourite opinions, the children of their youth; to sink from a state of security and confidence, into one of suspense and scepticism. Accordingly, few physicians change either the principles or practice they first set out with. We have some striking examples of men of genius in physic, writing systems of practice, early in life, who have arrived at a very old age, greatly admired for their capacity, and possessed of the most extensive practice; and though in the course of their lives, their systems had gone through many editions, yet there has been no material alteration of the last from the first: which affords a strong proof of the faithful attachment they retained to their first ideas

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and principles. Yet any person unacquainted with the history of physic, would naturally suppose that a physician, of accurate observation and extensive practice, should, in the course of a long life, have made such an addition to his stock of knowledge, as must necessarily have rendered his last performances of infinitely more value than his first; as must have confirmed him in some opinions, of which he was formerly doubtful; but discovered to him the folly or uncertainty of many more, whose truth, in his younger days, he had thought perfectly established. If we now enquire into the effects produced on the mind, by acquiring knowledge, in the slow method of induction, from observations and experiments, we shall find them very different. The mind here gains a habit of close attention to facts, having nothing else to trust to; slow in forming principles from these facts, and diffident of them when formed, instead of being assuming and dogmatical, becomes modest and sceptical.

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A physician, whose knowledge has been formed in this manner, never loses a patient, but he secretly laments his own ignorance of the proper means of having saved him, which he is always more ready to blame, than the incurableness of the disease itself. There are many diseases, which no physician yet has been able to cure; but it does not follow from this, that all these diseases are absolutely incurable. There are so very few diseases that can be pronounced, in their own nature, incurable, that I would wish you to annex no other idea to the phrase, incurable disease, but the idea of a disease which you do not know how to cure. How many patients have been dismissed from different hospitals, as incurables, who yet have recovered perfect health, sometimes by the efforts of unassisted nature, sometimes by very simple and safe remedies, and sometimes by the random and desperate prescriptions of ignorant and impudent quacks? To pronounce diseases incurable, is to establish indolence

and carelessness, as it were by a law, and to screen ignorance from reproach. This diffidence of our own knowledge naturally stimulates us to improve it, not only from a love of science, but from a principle of conscience and humanity. We own, that this philosophical spirit, if it is not united with great strength of mind, may be very detrimental to a physician, by making him timid and fluctuating in his practice: but though true philosophy leads to diffidence and caution, in forming principles, yet, when there is occasion to act, it shews how necessary it is to have a quickness in perceiving where the greatest probability of truth lies, to be decisive in forming a resolution, and steady in putting it in execution. As every professor, of an enlarged mind must be sensible of the inconveniencies that attend the usual method of teaching, he will guard against it by every method in his power, particularly by pointing out all the deficiencies in his system, and by promoting a spirit of free enquiry

enquiry among his students, and an absolute contempt of the authority of all great names, in every thing but matters of fact. In these their authority must be submitted to, unless there be reason to doubt their integrity, or suspect their credulity. I throw out these observations with great freedom from this place, where I am sure I cannot be misunderstood. In some universities in Europe, a little more caution might have been expected; but I am well acquainted with the liberal spirit that breathes in this university, in every department of science, and in none more than in all the branches of medicine. But there are none of my obligations to it, which I remember with more gratitude, than the acquisition of that freedom of enquiry, which then distinguished it, and which so eminently distinguishes it at this time. Let me take this opportunity of doing justice to the merit of several gentlemen, who have, within these few years, done honour to this medical college by their inaugural dissertations.

In these, several important investigations have been carried on, by a set of accurate and well-conducted experiments, under the direction of some of my learned and ingenious colleagues, particularly Dr. Cullen and Dr. Monro, which really tend to the advancement of the science. This method of giving a specimen of a young physician's genius, is attended with so many advantages, so creditable to himself, and so useful to the public, that I should be extremely sorry to see it fall again into disuetude.

2. But, to return to my subject, I would observe, in the second place, that the confinement of the practice of physic entirely to a class of men, who have no other method of subsistence, is unfavourable to the progress of the art; because the spirit of improvement is often checked by, and is sometimes incompatible with, the necessary attention to private interest. Physicians are neither better nor worse than the rest of mankind. They are influenced

fluenced by the same general motives of action. A physician, when he sets out in life, quickly perceives, that the knowledge most necessary to procure him a subsistence, is not the mere knowledge of his profession. What he finds more essential to that purpose, are the various arts of flattery and insinuation, and the arts of deceiving mankind into a high opinion of his understanding, by an appearance of solemnity and importance in his whole deportment; views very different from those of genius and science. He can with difficulty find a patron to his real merit; because none are judges of it, but a few of his own profession, whose interest it is to have it concealed. If he attempts to shew the weakness of the fashionable system, or to introduce any alteration in the practice, the whole faculty are alarmed; their vanity is piqued, in having opinions, which they thought perfectly established, brought into question, and exposed by a young man; and their interest is evidently concerned,

to crush him as soon as possible. In the mean time, the effect of every deviation, which he makes from the common practice, is anxiously watched, all his prescriptions must remain upon the apothecary's file, to rise in judgment against him; and upon any miscarriage, the outcry is raised and propagated with the utmost malignity. Now, as physic is yet but a conjectural art, no improvement can ever be attempted in it, without some risque of bad success; and the opportunities of misrepresentation, not easily to be refuted, are so many, that few will venture the experiment. Sometimes it happens, that a man of spirit rises above all these difficulties; but it happens, unfortunately, that this sort of boldness does not so often accompany literary merit, as diffidence and want of resolution. By what is said above, no reflection is intended to be thrown on mankind, as if they were naturally enemies to superior merit. In the pursuits of interest, and of ambition, one man does

does not hate another, because he is engaged in the same race; he desires him only to keep his proper distance behind, and he will wish him extremely well. Neither is it meant, while we describe the characteristical spirit of a class of men, to include all the individuals of a profession. There is a conscious dignity, that generally accompanies genius, which renders those who possess it equally superior to the suggestions of envy, and all the low arts of dissimulation.

But not to insist further on arguments that shew, that no considerable improvement in the art of medicine can be expected from physicians, while they are on the present footing, I shall only observe as a fact, that it appears from the history of medicine, that the improvements in it were seldom owing to those physicians, who valued themselves upon being regular, systematic, rational practitioners; nay, what is more extraordinary, they have been often opposed by them with
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great keenness and acrimony, and seldom adopted till after a very long struggle. We could give instances of this, in many of the improvements of modern practice, particularly in the case of blisters, opiates, Peruvian bark, antimony, mercury, and all the powerful chemical remedies; the inventors or introducers of these, from the days of Paracelsus down to Dr. Ward, have been held by the faculty in contempt and detestation. The discoveries of those men who were not regular physicians, have not been examined with that candid impartiality, which their importance and success required; yet from such men very useful discoveries may sometimes be expected. Quacks have advantages, in not being fettered like other physicians; as they seldom can suffer much, either in their interest or reputation, from the bad success of their experiments. But they have another great advantage above all regular physicians: they have much more extensive practice. Dr. Ward has prescribed for
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more dropfics in a week, than any phyfician in Europe could do in a twelvemonth. I allow that the ignorance, careleffnefs, and wrongheadednefs of moft of that tribe makes them profit but little, in proportion to what might have been expected from fo very extenfive a practice; and I allow, that there is but very little candour, or common honefty, in moft of their accounts of cures. But it is a phyfician's bufinefs, to fearch for knowledge in his profeffion from all fources, however impure and contemptible; and he may avail himfelf of that enlarged experience, which an empiric cannot, nor will not, turn to account. It was from ftrolling chemifts, and the loweft artificers, and not from the fchools of philofophy, that Mr. Boyle drew that large and ufeful collection of facts, with which he has enriched philofophy. A ftrange fate feems, in many inftances, to influence mankind. They are tenacious and jealous of their liberty and property: they ftill continue to clamour againft
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priestcraft, and the authority claimed by priests over their consciences, even now, when priests are living quietly and inoffensively, and not troubling themselves about any bodies consciences: yet they have trusted their health and lives into the hands of a class of men, without making any enquiry how they acquitted themselves of so important a charge. The science of physic has been sometimes advancing, sometimes declining; it has been subjected to the fate of the different systems of philosophy that have prevailed, besides being sometimes disgraced by peculiar follies of its own; its only genuine source, observation and experiment, has been corrupted by fraud, credulity, and a heated imagination, while men of genius and learning, because they were not physicians, have kept at a distance, as if it had been a matter in which they were not interested. I cannot, however, but observe, that the same manly and liberal spirit of enquiry, which has enlightened every other branch of natural knowledge,

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begins to find its way into medicine; that the tyranny of authority and system declines apace; and that there is a fair prospect of the science being rebuilt on the more solid basis of nature, on facts, and an accurate induction from facts. It is said, by those who want to shew the propriety of confining the study of physic entirely to a class of men who live by it as a profession, that the science is so complicated, that it requires the whole of a person's time and attention to understand it. The little progress it has made, notwithstanding the labours of so many ingenious and learned men, entirely devoted to its cultivation, is adduced as a proof of its difficulty and intricacy. It is said, that if people were encouraged to study physic, who were not regularly bred to it, and who did not intend to practise it as a trade, that quacks would be multiplied, and that patients would lose that confidence and implicit faith in the physician, which is convenient for their own sakes, as well as his. These reasons

reasons have appeared so powerful to the medical faculty, that they have watched, with the most jealous eye, over all intruders; and have usually treated them with great abuse and ridicule, even when it was apparent, that the intrusion was only owing to motives of humanity. It would not be candid to ascribe this to any sordid views: enlarged knowledge produces a liberal and unsuspicious spirit, and there is no profession that can boast of more men of learning, ingenuity, and genteel education, than physic. But I must take the liberty to observe, that the difficulties which a gentleman, not regularly bred to the profession, is to meet with in acquiring some share of medical knowledge, are greatly exaggerated. Medicine, considered in one point of view, is a science of infinite extent. I know not any other that presents so ample a field for the exertion of genius and industry; the purposes of it are of the utmost consequence to mankind, and it will require the united labours of many ages, however

however well they may be conducted, to bring it to such a state of perfection, as may even entitle it to the name of a science, according to the old school definition of a science, “ *cognitio certa & evidens.*” If, again, we consider medicine in the view of a profession, by which a gentleman is to live, it is still difficult and complicated. A physician of spirit, who would wish to appear with dignity in his profession, must be acquainted with various branches of knowledge, which are rather ornamental than essential to the main ends of his art; although he will be able to make the separation in his own mind, between the liberal accomplishments that distinguish the gentleman and scholar, and that knowledge which is indispensibly requisite to his practising with any degree of credit or success. A private gentleman, who has a literary turn, and chooses to study medicine as a curious and interesting branch of natural history, but who does not propose to practise it as a trade, may consider it in a view different from either of these.

Such a one has no intention to prosecute medicine with a design to improve the science; and requires none of those ornamental accomplishments, which give importance to a physician in the eyes of the world. He wishes only for such a degree of knowledge, as may enable him to understand such books of merit, as have been written on the subject of physic, and to judge of the comparative merit of those men to whom he is to commit the important charge of his own health, and the health of those whom he is obliged, by the ties of nature and humanity, to take care of. This is a matter of no such great difficulty as it is pretended to be. It requires, indeed, such a knowledge of anatomy as is necessary to understand the animal oeconomy, both in its sound and morbid state. It requires a knowledge of the principles of chemistry, and of the operation of remedies: it requires an acquaintance with diseases, and the usual method of treating them. This may be taught by any good system of practice. These systems are all compila-

compilations, that differ from one another, rather in neatness and elegance, than in any thing material. The latest system often has the advantage, in containing all the fashionable prescriptions; but none of the facts which they contain can be entirely depended on, unless ascertained by personal experience; from which source alone, from an attentive observation of the sick, and the effects of what is prescribed, all solid knowledge on this subject must be derived. Next to his own experience, he will learn most from the conversation of a sagacious and candid physician, who will direct his studies, and communicate the result of his own observations. If ingenious men would devote half the time to the study of nature, which they give to the study of opinions, true philosophy would make a very rapid progress. If a gentleman has a turn for observation, the natural history of his own species is a more interesting subject, and presents a more ample field for the exertion of genius,

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than the natural history of spiders and cockle-shells. If such men were to claim their right of enquiry into a subject that so nearly concerns them, the good effects on medicine would soon appear. They would have no separate interest from that of the art. They would detect and expose assuming ignorance, under the mask of gravity and importance, and would be the judges and patrons of modest merit. Cases very often occur where an ingenious physician sees his patient hastening to certain death; he knows a remedy that affords a probable prospect of saving his life, but it is uncommon, not agreeable to the established orthodox system, and dangerous in its operation. Here is a dreadful dilemma. If he gives the remedy, and the patient dies, he is utterly ruined. The dunces, who are the most numerous in every profession, are always at war with genius, and watch its miscarriages with the most anxious and malignant eye. But in such a case, the encouragement and assured protection of knowing

knowing and disinterested judges would animate a physician to do his duty. Such men, not having had their understandings perverted in their youth by theories, unawed by authority, and unbiassed by interest, would canvass with freedom the most universally received principles in medicine, and expose the uncertainty of many of those maxims which a physician dares not seem to doubt of. Lord Bacon had as enlarged views in medicine, of its deficiencies, and of the proper method of supplying them, as perhaps any physician that ever wrote. Dr. Hales has been one of its greatest benefactors. Cornaro, a Venetian nobleman, when some years turned of fourscore, composed a little treatise on regimen, written with more candour, simplicity, and precision, than any thing I have seen on the subject. With more pleasure could I name Mr. Boyle on this occasion, had not his credulity lessened that esteem, which his diligence, genius, and many virtues, so well merited. It is said, that if the my-

steries of the art were thus to be laid open to those who were not regularly initiated, it would destroy the physician's authority, and that implicit faith which the sick ought to have in him, for their own sakes. But, in fact, his authority is controuled by all, except those who alone should have any title to controul it. All the midwives, nurses, and old women are physicians; and the dignity of the most stately of our faculty is often obliged to stoop to the follies and caprices of such people, who are sometimes of more consequence in making a physician's fortune, than all the merit he can possess. The only tame and believing patients are the men of sense, who generally submit to their physician, whoever he is, with wonderful faith and patience. But if these men were to devote part of their time and studies to medicine, they could more effectually support the physician's authority against the encroachments of ignorant pretenders; and, at the same time that they were
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conscious of the superiority of a physician of extensive learning and practice, yet they might occasionally suggest hints of great consequence to the ablest physician. We may here observe, that the same objections made against any person's pretending to judge of medical subjects, who has not been regularly bred to the profession, were formerly made against the reformers from Popery. Besides the Divine authority claimed by the church, it was said, that a set of men, who devoted their whole time and studies to so deep and complicated a subject as theology, were the only proper judges of whatever belonged to it; that calling their authority in question, was hurting the cause of religion, and bringing the sacerdotal character into contempt. Yet experience has shewn, that since the laity have asserted their right of enquiry into these subjects, theology, considered as a science, has been improved, the interests of real religion have been promoted, and the clergy have become a
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more learned, a more useful, and a more respectable body of men, than they ever were in the days of their greatest power and splendor.

By what I have said, I hope it will evidently appear, that I have no intention to lessen the dignity of a profession, which has been always considered as most honourable and important. But, I apprehend, this dignity is not to be supported by a narrow, selfish, corporation spirit, by a peculiar formality in dress and manners, or by affected airs of mystery and self-importance. The true dignity of physic is to be maintained by the superior learning and abilities of those who profess it, by the liberal manners of gentlemen, and by that openness and candour, which disdain all artifice, which invite a free inquiry, and which, by this means, boldly bid defiance to all that illiberal ridicule and abuse which medicine has been so much exposed to.

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